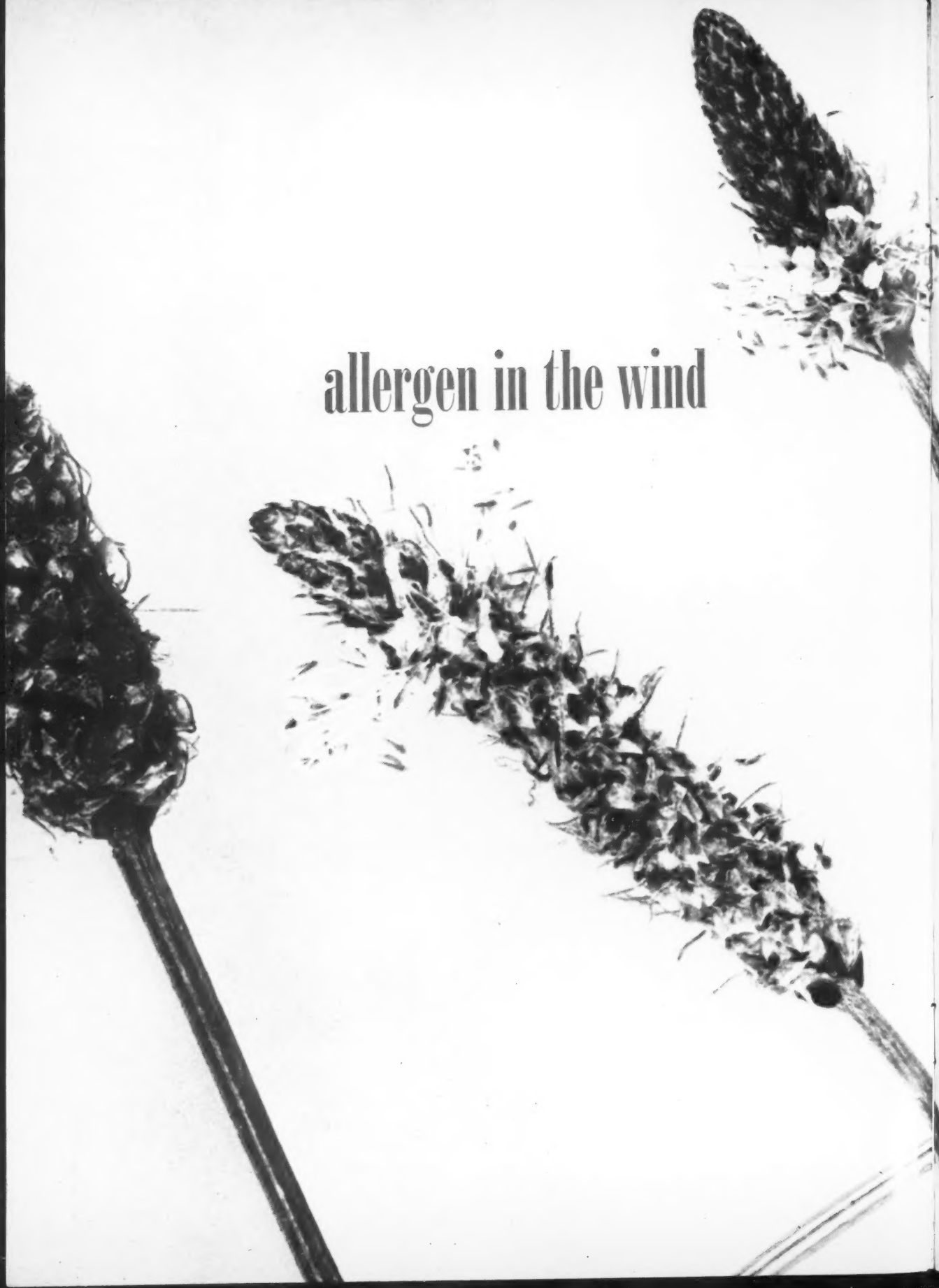
THE Journal OF THE Kansas Medical Society

AUGUST
1960

VOL LXI
NO. VIII

STORMONT MEDICAL LIBRARY
TOPEKA, KANSAS
AUG 13 1960


allergen in the wind

when pollens harry the unwary

BENADRYL®

antihistaminic-antispasmodic

gives prompt, comprehensive relief

In hay fever, BENADRYL provides simultaneous, dual control of allergic symptoms. Nasal congestion, lacrimation, sneezing, and related histamine reactions are effectively relieved by the *antihistaminic action* of BENADRYL. At the same time, its *antispasmodic effect* alleviates bronchial and gastrointestinal spasms. This duality of action makes BENADRYL valuable throughout a wide range of allergic disorders.

BENADRYL Hydrochloride (diphenhydramine hydrochloride, Parke-Davis) is available in a variety of forms including: Kapseals,® 50 mg. each; Kapseals, 50 mg., with ephedrine sulfate, 25 mg.; Capsules, 25 mg. each; Elixir, 10 mg. per 4 cc.; and for delayed action, Emplets,® 50 mg. each. For parenteral therapy, BENADRYL Hydrochloride Steri-Vials,® 10 mg. per cc.; and Ampoules, 50 mg. per cc.

26760

PARKE-DAVIS

PARKE, DAVIS & COMPANY • DETROIT 32, MICHIGAN

Volume LXI, Number 8—August, 1960

The JOURNAL of the KANSAS MEDICAL SOCIETY

Contents for August, 1960

Scientific Articles

Coarctation of the Aorta—*William A. Reed, M.D., and C. Frederick Kittle, M.D., Kansas City* 415
Department of Medicine—*E. Grey Dimond, M.D., Kansas City* . 423
The Juvenile Diabetic—*Frederick W. Blancke, M.D., Topeka* . . 427
Childhood Nephrosis—*Ralph R. Hall, M.D., and Robert C. Fairchild, M.D., Kansas City* 432

Tumor Conference

Adenoma of the Pituitary Gland With Acromegaly—*C. C. Jones, M.D.* 435

Student Thesis

The Abnormal Hemoglobins and Associated Diseases—*L. H. Bates, M.D., Akron* 440

Miscellaneous

The President's Message 447
Editorials 448
Delegates Report 450
Business Side of Medicine 453
Blue Shield 455
Announcements 457
Washington Highlights 459
Obituaries 461
Personals 462
Book Reviews 463

Copyright, 1960, by the Kansas Medical Society

Editor: Orville R. Clark, M.D., Topeka.
Editorial Board: The Editor; David E. Gray, M.D., Topeka; Richard Greer, M.D., Topeka; Dwight Lawson, M.D., Topeka; John A. Segerson, M.D., Topeka.
Associate Editors: Jesse R. Rising, M.D., Kansas City, Donald P. Trees, M.D., Wichita.
Managing Editor and Advertising Manager: Dallas F. Whaley, 315 West Fourth Street, Topeka.
Business Manager: Oliver E. Ebel, 315 West Fourth Street, Topeka.

THE JOURNAL is published by the Kansas Medical Society at 1201-1205 Bluff Street, Fulton, Missouri. A year's subscription is included in membership in the Kansas Medical Society, with $2.00 of each member's dues apportioned to THE JOURNAL. Rates to others, except in foreign countries, $4.00 per year or 60 cents per copy. Second-class postage paid at Fulton, Missouri. Non-Responsibility: Although effort is made to publish only accurate articles and legitimate advertisements, THE JOURNAL denies legal responsibility for statements, opinions, or advertisements appearing under the names of contributors or concerns.

CLINICAL REMISSION IN A "PROBLEM" ARTHRITIC

In rheumatoid arthritis with diabetes mellitus. A 54-year-old diabetic with a four-year history of arthritis was started on DECADRON, 0.75 mg./day, to control severe symptoms. After a year of therapy with 0.5 to 1.5 mg. daily doses of DECADRON, she has had no side effects and diabetes has not been exacerbated. She is in clinical remission.*

New convenient b.i.d. alternate dosage schedule: the degree and extent of relief provided by DECADRON allows for b.i.d. maintenance dosage in many patients with so-called "chronic" conditions. Acute manifestations should first be brought under control with a t.i.d. or q.i.d. schedule.

Supplied: As 0.75 mg. and 0.5 mg. scored, pentagon-shaped tablets in bottles of 100. Also available as Injection DECADRON Phosphate. Additional information on DECADRON is available to physicians on request. DECADRON is a trademark of Merck & Co., Inc.

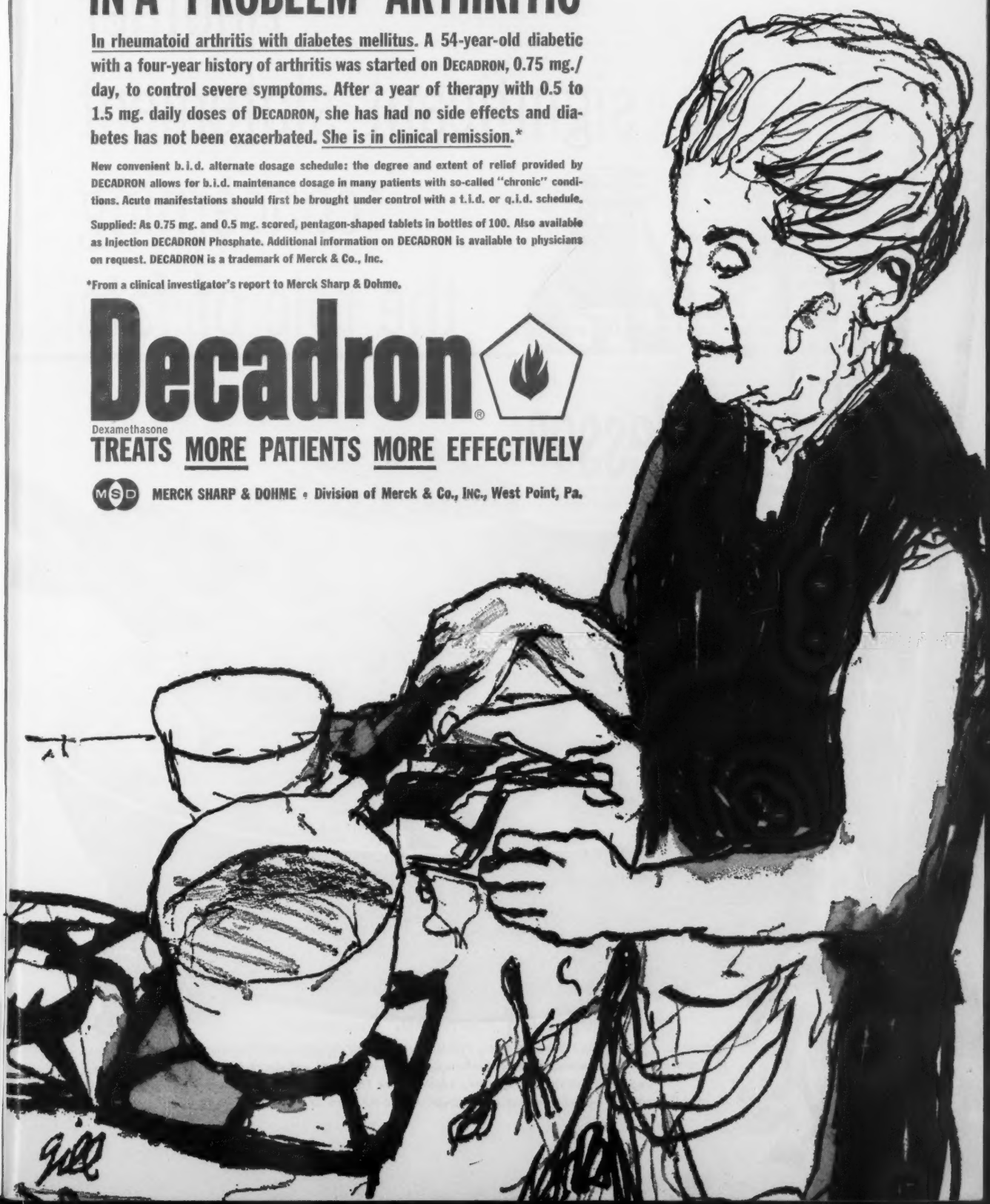
*From a clinical investigator's report to Merck Sharp & Dohme.

Decadron®

Dexamethasone

TREATS MORE PATIENTS MORE EFFECTIVELY

MSD **MERCK SHARP & DOHME** • Division of Merck & Co., INC., West Point, Pa.



Another significant statement concerning the role of fats.....

FREE: *Wesson recipes, available in quantity for your patients, show how to prepare meats, seafoods, vegetables, salads and desserts with poly-unsaturated vegetable oil. Request quantity needed from The Wesson People, Dept. N, 210 Baronne St., New Orleans 12, La.*

Dietary Linoleic Acid and Linoleate—*Effects in Diabetic and Nondiabetic Subjects with and without Vascular Disease*

A paper by Laurance W. Kinsell, M.D., et al., excerpted from Diabetes—The Journal of the American Diabetes Association, May-June 1959

"*Linoleic acid as the major 'hypocholesterolemic agent' in vegetable fats.* The question has been raised as to the mechanism of lowering of the plasma lipids by a variety of vegetable fats. Among the entities present in or absent from vegetable fat which have been considered are: (a) the absence of cholesterol; (b) the presence of certain vegetable sterols; (c) the presence of certain vegetable phospholipids; (d) the nature of one or more of the fatty acids present; (e) the presence of trace materials.

....in the diet

The absence of cholesterol has been excluded as a major factor.[5a] Phospholipids, if they contain a sufficient quantity of unsaturated fatty acids may produce a striking reduction. In our experience thus far saturated phospholipids fail to produce such an effect.[7]

Beveridge and his associates believe that vegetable sterols, particularly beta-sitosterol, are responsible to a significant degree for the cholesterol-lowering effect.[8] In our experience the vegetable sterols have a relatively weak and unpredictable effect of this sort.

Since the fatty acids of animal fats are predominantly saturated, and the fatty acids of most vegetable fats are predominantly polyunsaturated, with linoleic acid as the major component of the vegetable fats which lower cholesterol and other lipids, the question arises whether linoleic acid per se is capable of lowering plasma lipids. As reported previously[7] this is indeed the case. In a recent study in a young male with peripheral atherosclerosis in association with elevation of plasma cholesterol and of total lipids, ethyl linoleate produced a greater fall in the plasma lipid levels than had moderate amounts of natural sources of unsaturated fat. Linoleic acid, therefore, appears to be the most important single lipid-lowering component of vegetable fat.

* * *

Significantly higher levels of cholesterol were observed during oleate administration than during administration of equal amounts of linoleate. The relatively low cholesterol values during the second oleate period may have been related to linoleate stored in fat depots. The fatty acid composition of the cholesterol esters reflected the fat which was fed, i.e., the mono-enoic† acid content averaged more than 40 per cent during oleate feeding and less than 20 per cent during linoleate ingestion. Essentially, a mirror image of this resulted during linoleate feeding, at which time di-enoic acid predominated.

* * *

The data presented in this paper appear to establish that linoleic acid administered either as purified ethyl ester or as naturally occurring fat, in sufficient quantity, in properly constructed diets, will reduce plasma lipids to normal levels. The amount of linoleic acid required appears to bear a direct relationship to the amount of saturated fat included in the diet. Linoleic acid requirement may also bear a significant relationship to the amount of atherosclerosis present.

The transition from evaluation of the effect of dietary entities upon plasma lipids, to the evaluation of the effect of such materials upon vascular disease is difficult. However, such evaluation is not impossible. The requisites are adequate measuring sticks and well-controlled studies of sufficient duration. The duration of observation of effects of unsaturated fat in diabetic and nondiabetic patients with vascular disease is in no instance more than five years, and in the majority of instances, less than three. Our present impression is that improvement has occurred in some patients with atherosclerosis and with diabetic retinal and renal disease which was more than we would have anticipated in terms of the natural course of the disease. However, since it is well known that major fluctuations in these diseases can occur in individuals receiving no treatment, we believe it is appropriate at this time to say that no untoward effects appear to result when one prescribes diets containing large amounts of unsaturated fat for patients with such diseases, and it is not impossible that beneficial effects may be associated with such diets."

* * *

5a Kinsell, L.W., Partridge, J. W., Boling, L., Margen, S., and Michaels, G.D.: Dietary modification of serum cholesterol and phospholipid levels. J. Clin. Endocrinol and Met. 12:909, 1952.

7 Kinsell, L. W., Friskey, R., Splitter, S., Michaels, G. D.: Essential fatty acids, lipid metabolism, and atherosclerosis. Lancet 1:334, 1958.

8 Beveridge, J.M., Connell, W.F., Firstbrook, J. B., Mayer, G.A., and Wolfe, M.J.: Effects of certain vegetable and animal fats on plasma lipids of humans. J. Nutrition 56:311, 1955.

† Mono-enoic (mono-unsaturated) acid is presumably synonymous under these conditions with oleic acid and di-enoic (di-unsaturated) acid with linoleic acid

Where a vegetable (salad) oil is medically recommended for a cholesterol depressant regimen, Wesson is unsurpassed by any readily available brand.

WESSON'S IMPORTANT CONSTITUENTS

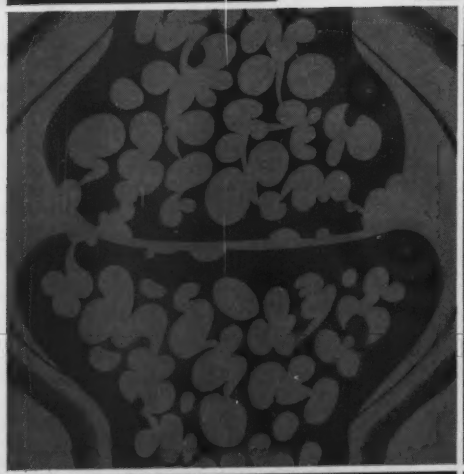
Wesson is 100% cottonseed oil . . . winterized and of selected quality		Palmitic, stearic and myristic glycerides (saturated)	25-30%
Linoleic acid glycerides (poly-unsaturated)	50-55%	Phytosterol (predominantly beta sitosterol)	0.3-0.5%
Oleic acid glycerides (mono-unsaturated)	16-20%	Total tocopherols	0.09-0.12%
Total unsaturated	70-75%	Never hydrogenated—completely salt free	

in rheumatic disorders

whenever aspirin proves inadequate

Sterazolidin®

brand of prednisone-phenylbutazone



Even in the more transient rheumatic disorders, an anti-inflammatory effect more potent than that provided by aspirin is often desirable to hasten recovery and get the patient back to work. By combining the anti-inflammatory action of prednisone and phenylbutazone, Sterazolidin brings about exceptionally rapid resolution of inflammation with relief of symptoms and restoration of function. Since Sterazolidin is effective in low dosage, the possibility of significant hypercortisonism, even in long-term therapy, is substantially reduced.

1.25 mg.; Butazolidin®, brand of phenylbutazone, 50 mg.; dried aluminum hydroxide gel 100 mg.; magnesium trisilicate 150 mg.; and homatropine methylbromide 1.25 mg. Bottles of 100 capsules.

Geigy, Ardsley, New York

Geigy

165-60

Diagnostic Quandaries

Colitis? Gall Bladder Disease?
Chronic Appendicitis?
Rheumatoid Arthritis? Regional Enteritis?

A DISEASE that is frequently overlooked in solving diagnostic quandaries is amebiasis. Its symptoms are varied and contradictory, and diagnosis is extremely difficult. In one study, 56% of the cases would have been overlooked if the routine three stool specimens had been relied on.[1]

Another study found 96% of a group of 150 patients with rheumatoid arthritis were infected by *E. histolytica*. In 15 of these subjects, nine stool specimens were required to establish the diagnosis.[2]

Webster discovered amebic infection in 147 cases with prior diagnoses of spastic colon, psychoneurosis, gall bladder disease, nervous indigestion, chronic appendicitis, and other diseases. Duration of symptoms varied from one week to over 30 years. In some cases, it took as many as six stool specimens to establish the diagnosis of amebiasis.[3]

Now treatment with Glarubin provides a means of differential diagnosis in suspected cases of amebiasis. Glarubin, a crystalline glycoside obtained from the fruit of *Simarouba glauca*, is a safe, effective amebicide. It contains no arsenic, bismuth, or iodine. Its virtual freedom from toxicity makes it practical to treat suspected cases without undertaking difficult, and frequently undependable, stool analyses. Marked improvement following administration of Glarubin indicates pathologically significant amebic infection.

Glarubin is administered orally in tablet form and does not require strict medical supervision or hospitalization. Extensive clinical trials prove it highly effective in intestinal amebiasis.

Glarubin*

TABLETS

specific for intestinal amebiasis

Supplied in bottles of 40 tablets, each tablet containing 50 mg. of glaucarubin.

Write for descriptive literature, bibliography, and dosage schedules.

1. Cook, J.E., Briggs, G.W., and Hindley, F.W.: Chronic Amebiasis and the Need for a Diagnostic Profile, Am. Pract. and Dig. of Treat. *6*:1821 (Dec., 1955).

2. Rinehart, R.E., and Marcus, H.: Incidence of Amebiasis in Healthy Individuals, Clinic Patients and Those with Rheumatoid Arthritis, Northwest Med., *54*:708 (July, 1955).

3. Webster, B.H.: Amebiasis, a Disease of Multiple Manifestations, Am. Pract. and Dig. of Treat. *9*:897 (June, 1958).

*U.S. Pat. No. 2,864,745

THE S.E. MASSENGILL COMPANY

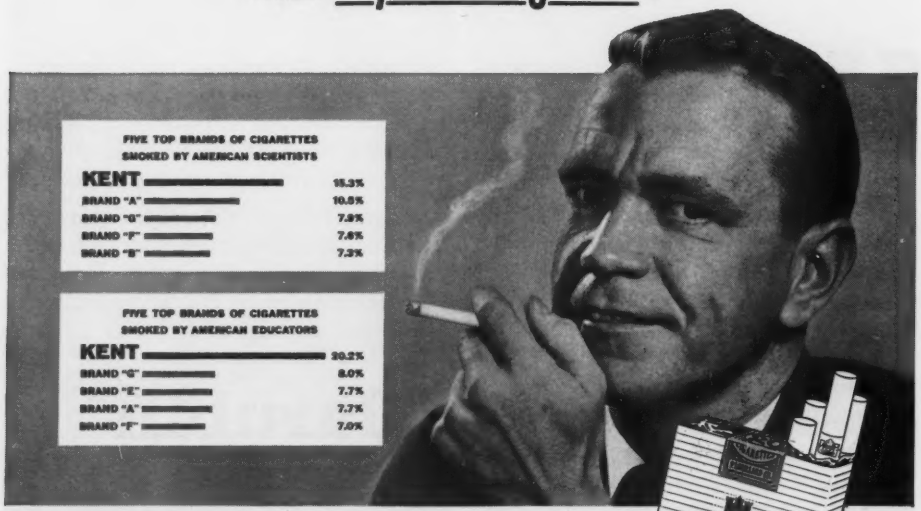
BRISTOL, TENNESSEE

NEW YORK • KANSAS CITY • SAN FRANCISCO

ALL OVER AMERICA!

KENT with the MICRONITE FILTER IS SMOKED BY MORE SCIENTISTS and EDUCATORS

than any other cigarette!*



KING-SIZE, REGULAR-SIZE OR CRUSH-PROOF BOX

THIS does not constitute a professional endorsement of Kent. But these men, like millions of other Kent smokers, smoke for pleasure, and choose their cigarette accordingly.

The rich pleasure of smoking Kent comes from the flavor of the world's finest natural tobaccos, and the free and easy draw of Kent's famous Micronite Filter.

If you would like the booklet, "The Story of Kent", for your own use, write to: P. Lorillard Company—Research Department, 200 East 42nd Street, New York 17, New York.

For good smoking taste, it makes good sense to smoke KENT

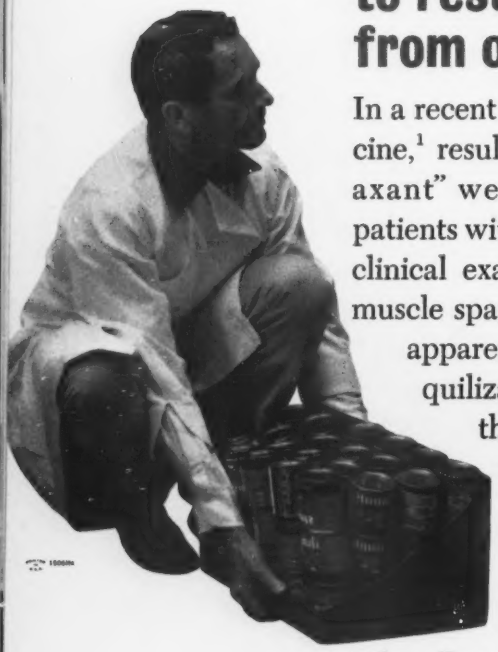
* Results of a continuing study of cigarette preferences, conducted by O'Brien-Sherwood Associates, N.Y., N.Y.

A PRODUCT OF P. LORILLARD COMPANY · FIRST WITH THE FINEST CIGARETTES · THROUGH LORILLARD RESEARCH

© 1960, P. LORILLARD CO.

Save a
family breadwinner
lost time from
LOW BACK PAIN
with
Trancopal®
Brand of chlormezanone
effective oral skeletal
muscle relaxant
and mild tranquilizer

Trancopal enables patients to resume their duties in from one to two days.



In a recent study of Trancopal in industrial medicine,[1] results from treatment with this "tranquil-axant" were good to excellent in 182 of 220 patients with muscle spasm or tension states. From clinical examination of those patients in whom muscle spasm was the main disorder, ". . . it was apparent that the combined effect of tranquilization and muscle relaxation enabled them to resume their normal duties in from twenty-four to forty-eight hours. . . . It is our clinical impression that Trancopal is the most effective oral skeletal muscle relaxant and mild tranquilizer currently available."[1] Side effects occurred in only 12 patients, and: "No patient required that the dosage be reduced to less than one Caplet three times daily because of intolerance."[1]

Clinical results with *Trancopal*®[1]

	Excellent	Good	Fair	Poor	Total
LOW BACK SYNDROMES					
Acute low back strain	25	19	8	6	58
Chronic low back strain	11	5	1	1	18
"Porters' syndrome"*	21	5	1	1	28
Pelvic fractures	2	1	—	—	3
NECK SYNDROMES					
Whiplash injuries	12	6	2	1	21
Torticollis, chronic	6	2	3	2	13
OTHER MUSCLE SPASM					
Spasm related to trauma	15	6	1	—	22
Rheumatoid arthritis	—	18	2	1	21
Bursitis	2	6	1	—	9
TENSION STATES	18	2	4	3	27
TOTALS	112 (51%)	70 (32%)	23 (10%)	15 (7%)	220 (100%)

*Over-reaching in lifting heavy bags resulting in sprain of upper, middle, and lower back muscles.

Dosage: **Adults, 200 or 100 mg. orally three or four times daily.**
Relief of symptoms occurs in from fifteen to thirty minutes and lasts from four to six hours.

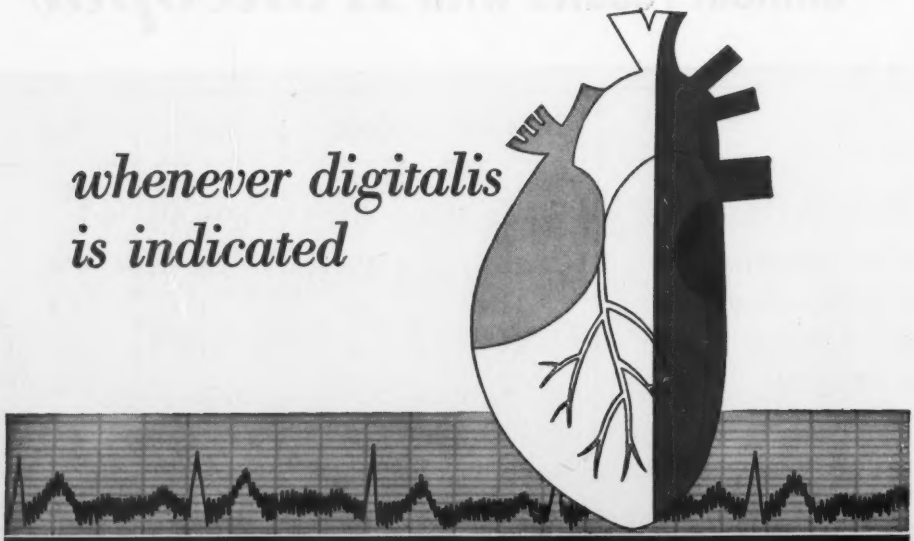
How Supplied: Trancopal Caplets®
200 mg. (green colored, scored), bottles of 100.
100 mg. (peach colored, scored), bottles of 100.

1. Kearney, R. D.: *Current Therap. Res.* 2:127, April, 1960.

1506M Trancopal (brand of chlormezanone) and Caplets, trademarks reg. U. S. Pat. Off.

Winthrop LABORATORIES, New York 18, N. Y.

whenever digitalis is indicated



'LANOXIN'® brand **DIGOXIN**

formerly known as Digoxin 'B. W. & Co.'

"If one digitalis agent were to be recommended for its adaptability to the many and varied clinical contingencies, we believe Digoxin would be the drug of choice."

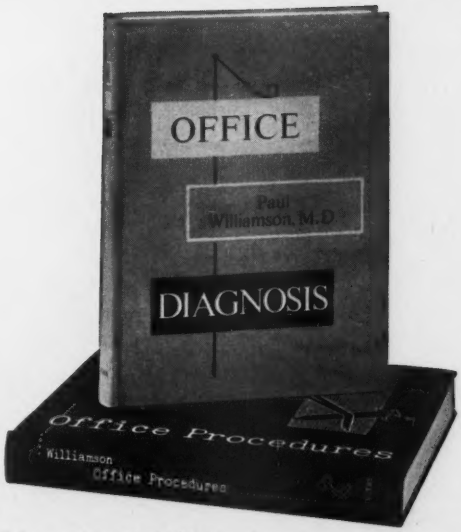
Lown, B., and Levine, S. A.: Current Concepts in Digitalis Therapy, Boston, Little, Brown & Company, 1954, p. 23, par. 2.

'LANOXIN' TABLETS
0.25 mg. scored (white)
0.5 mg. scored (green)

'LANOXIN' INJECTION
0.5 mg. in 2 cc. (I.M. or I.V.)

'LANOXIN' ELIXIR PEDIATRIC
0.05 mg. in 1 cc.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.



2 Companion Volumes
by Paul Williamson, M.D.

Office Diagnosis

New! Written from the author's long experience in general practice, this book offers sound, ready-to-use advice on solving the family physician's daily diagnostic problems. With the help of simple line illustrations, Dr. Williamson informally details those diagnostic techniques that can be performed right in your own office.

97 important signs and symptoms are discussed. Beginning with symptomatic evidence, the author takes you back to its possible causes to help you arrive more easily at a tenable diagnosis. You will find symptoms such as *headache, hypertension, papular rash, anorexia, cough, cyanosis, heart murmurs, constipation, incontinence, pain in the breasts, leukorrhea* clearly covered. Where pertinent, Dr. Williamson offers definitive help on: etiology, history taking, general examination of the patient, x-ray, laboratory tests, drug therapy, diagnostic pitfalls to avoid, complications, etc.

If you are familiar with *Williamson's Office Procedures* (below), you know the kind of useful, down-to-earth help to expect from this new volume.

By PAUL WILLIAMSON, M.D. 470 pages, 8" x 11", with 350 illustrations. $12.50. *New!*

Office Procedures

Dr. Williamson fully discusses 379 useful management procedures for 171 common disorders and diseases in this unusual book. Aided by crystal clear illustrations, he tells you exactly how to best proceed with those techniques that can be safely and effectively performed in your own office. You will find precise descriptions of: how to irrigate the ear; how to pack for nosebleed; how to construct and fit a truss in inguinal hernia; how to treat muscle tears and ruptures; how to retrieve a retracted tendon; how to properly incise and drain a breast abscess; etc.

By PAUL WILLIAMSON, M.D. 412 pages, 8" x 11", with 1100 illustrations. $12.50. *Published 1955.*

New (2nd) Edition!

Frederick and Towner—The Office Assistant in Medical Practice

This handy manual will save you time and money in training an efficient office assistant. It is packed with help on every phase of her job —as *receptionist, secretary, nurse, bookkeeper* and *technician.*

These are the kind of problems on which your assistant will find valuable help: *What should you say in a series of collection letters?* How do you keep a narcotics inventory? *What should you remember in preparing the doctor's bag?* To whom do the patient's medical records belong? *How do you sharpen a hypodermic needle?* How do you prepare a patient for pelvic examination? etc.

The authors have brought this new edition fully up-to-date. The chapter on *Bookkeeping* is expanded with many new illustrations on the "write-it-once" bookkeeping system, etc. The chapter on *Instruments* is now much more detailed and clearly illustrated. Much new help is added on sterilization.

By PORTIA M. FREDERICK, Instructor, Medical Office Assisting, Long Beach City College; and CAROL TOWNER, Director of Special Services, Communications Division, American Medical Association. 407 pages, 5¾" x 8", illustrated. $5.25. *New (2nd) Edition!*

Order from **W. B. SAUNDERS COMPANY**—West Washington Sq., Phila. 5

Saunders books

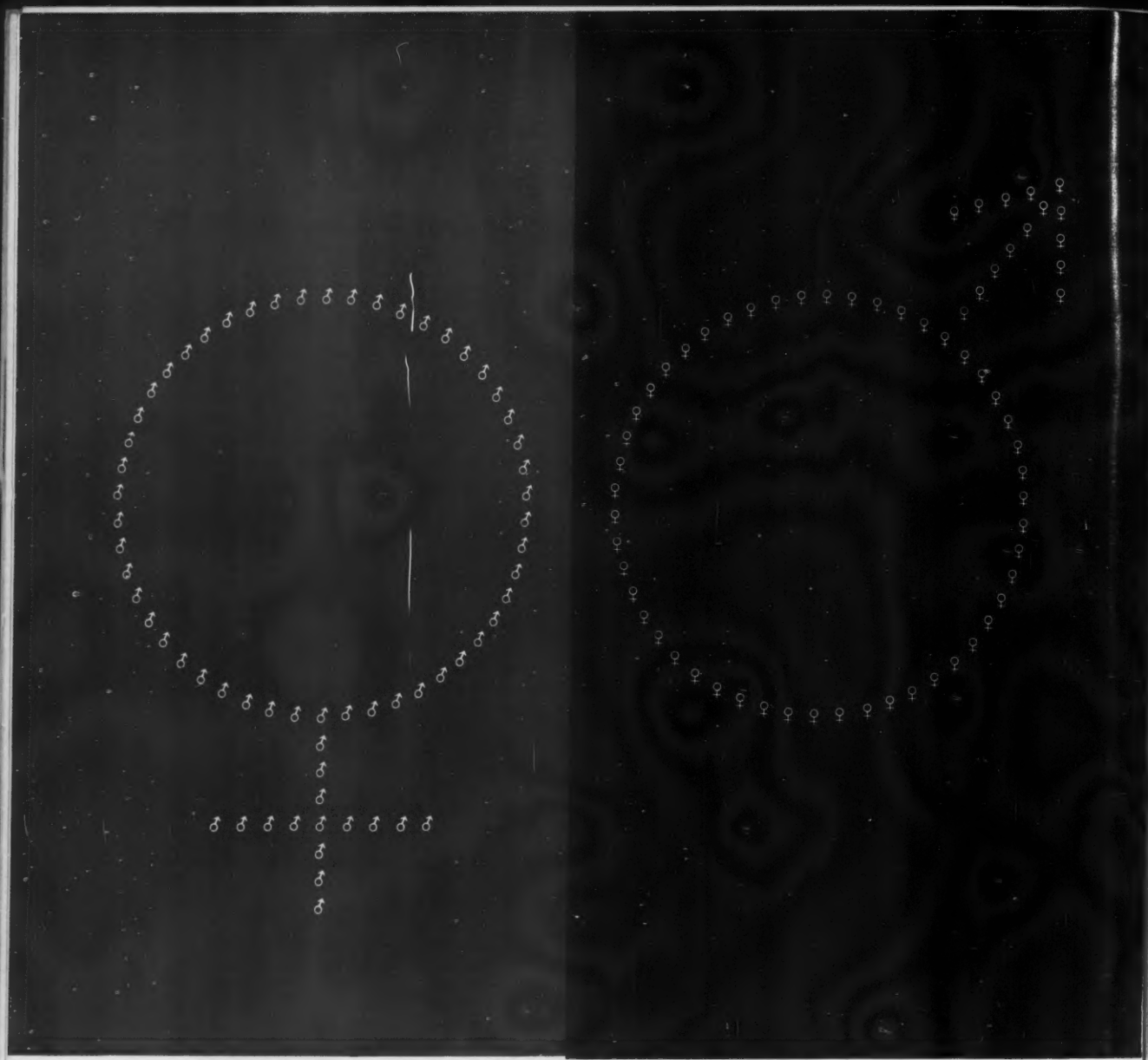
Please send me the following books and charge my account:

☐ Williamson's Office Diagnosis, $12.50 ☐ Williamson's Office Procedures, $12.50

☐ Frederick & Towner's The Office Assistant, $5.25

Name.....

Address..... SJG-860



GONORRHEA IS ON THE MARCH AGAIN...

a new timetable for recovery:

only six capsules of TETREX can cure a male patient with gonorrhea in *just one day

Tetrex®

U.S. PAT. NO. 2,791,600

THE ORIGINAL TETRACYCLINE PHOSPHATE COMPLEX

TETREX CAPSULES. 250 mg. Each capsule contains: TETREX (tetracycline phosphate complex equivalent to tetracycline HCl activity) – 250 mg.

DOSAGE: Gonorrhea in the male – Six capsules of TETREX in 3 divided doses, in one day.

* Marmell, M., and Prigot, A.: Tetracycline phosphate complex in the treatment of acute gonococcal urethritis in men. Antibiotic Med. & Clin. Ther. 6:108 (Feb.) 1959.

BRISTOL

BRISTOL LABORATORIES,
SYRACUSE, NEW YORK

Carrying on congestion-free with fast-acting

NTZ®

NASAL SPRAY

At the first allergic sneeze, two inhalations from the **NTZ** Nasal Spray act speedily to bring exceptional relief of symptoms. The first spray shrinks the turbinates and enables the patient to breathe through his nose again. The second spray, a few minutes later, opens sinus ostia for essential ventilation and drainage. Excessive rhinorrhea is reduced. **NTZ** is well tolerated and provides safe "inner space" without causing chemical harm to the respiratory tissues.

NTZ is a balanced combination of three thoroughly evaluated compounds:

- **Neo-Synephrine® HCl, 0.5%** to shrink nasal membranes and sinus ostia and provide inner space
- **Thenfadil® HCl, 0.1%** to provide powerful topical antiallergic action and lessen rhinorrhea
- **Zephiran® Cl, 1:5000** (antibacterial wetting agent and preservative) to promote spread and penetration of the formula to less accessible nasal areas

NTZ is supplied in leakproof, pocket size, squeeze bottles of 20 cc. and in bottles of 30 cc. with dropper.

QUICK SYMPTOMATIC RELIEF OF HAY FEVER OR PERENNIAL RHINITIS

Winthrop
LABORATORIES
New York 18, N. Y.

NTZ, Neo-Synephrine (brand of phenylephrine), Thenfadil (brand of thenyldiamine) and Zephiran (brand of benzalkonium, as chloride, refined), trademarks reg. U. S. Pat. Off.

she calls it "nervous indigestion"

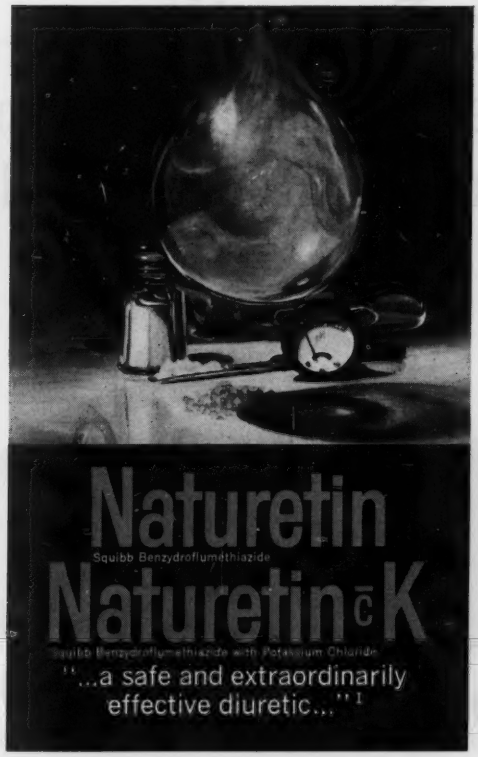
diagnosis: a wrought-up patient with a functional gastro-intestinal disorder compounded by inadequate digestion. **treatment:** reassurance first, then medication to relieve the gastric symptoms, calm the emotions, and enhance the digestive process. **prescription:** new Donnazyme—providing the multiple actions of widely accepted Donnatal® and Entozyme®—two tablets t.i.d., or as necessary.

Each Donnazyme tablet contains
—In the gastric-soluble outer layer: Hyoscyamine sulfate, 0.0518 mg.; Atropine sulfate, 0.0097 mg.; Hyoscine hydrobromide, 0.0033 mg.; Phenobarbital (1/8 gr.), 8.1 mg.; and Pepsin, N. F., 150 mg. **In the enteric-coated core:** Pancreatin, N. F., 300 mg., and Bile salts, 150 mg.

ANTISPASMODIC - SEDATIVE - DIGESTANT

DONNAZYME®

A. H. ROBINS COMPANY, INCORPORATED • RICHMOND 20, VIRGINIA



Naturetin — reliable therapy in edema and hypertension — maintains a favorable urinary sodium-potassium excretion ratio . . . retains a balanced electrolytic pattern:

"...the increase in urinary output occurs promptly..."[1]

"...the least likely to invoke a negative potassium balance..."[2]

"...a dose of 5 mg. of Naturetin produces a maximal sodium loss."[2]

"...an effective diuretic agent as manifested by the loss in weight..."[3]

"...no apparent influence of clinical importance on the serum electrolytes or white blood count."[3]

"...no untoward reactions were attributed to the drug."[4]

Although Naturetin causes the least serum potassium depletion as compared with other diuretics, supplementary potassium chloride in Naturetin c̄ K provides added protection when treating hypokalemia-prone patients; in conditions where likelihood of electrolyte imbalance is increased or during extended periods of therapy.

Numerous clinical studies confirm the effectiveness[1-15] of Naturetin as a diuretic and antihypertensive — usually in dosages of 5 mg. per day.

■ the most potent diuretic, mg. for mg.—more than 100 times as potent as chlorothiazide ■ prolonged action — in excess of 18 hours ■ maintains its efficacy as a diuretic and antihypertensive even after prolonged or increased dosage use ■ convenient once-a-day dosage — more economical for patients ■ low toxicity — few side effects—low sodium diets not necessary ■ not contraindicated except in complete renal shutdown ■ *in hypertension*—significant lowering of the blood pressure. Naturetin may be used alone or with other antihypertensive drugs in lowered doses.

Supplied: Naturetin Tablets, 5 mg. (scored) and 2.5 mg. Naturetin c̄ K (5 c̄ 500) Tablets (capsule-shaped) containing 5 mg. benzydroflumethiazide and 500 mg. potassium chloride. Naturetin c̄ K (2.5 c̄ 500) Tablets (capsule-shaped) containing 2.5 mg. benzydroflumethiazide and 500 mg. potassium chloride.

SQUIBB

Squibb Quality—the Priceless Ingredient

References: 1. David, N. A.; Porter, G. A., and Gray, R. H.: Monographs on Therapy 3:60 (Feb.) 1960. 2. Stenberg, E. S., Jr.; Benedetti, A., and Forsham, P. H.: Op. cit. 3:46 (Feb.) 1960. 3. Fuchs, M.; Moyer, J. H., and Newman, B.E.: Op. cit. 3:55 (Feb.) 1960. 4. Marriott, H. J. L., and Schamroth, L.: Op. cit. 3:14 (Feb.) 1960. 5. Ira, G. H., Jr.; Shaw, D. M., and Bogdonoff, M. D.: North Carolina M. J. 21:19 (Jan.) 1960. 6. Cohen, B. M.: M. Times, to be published. 7. Breneman, G. M., and Keyes, J. W.: Henry Ford Hosp. M. Bull. 7:281 (Dec.) 1959. 8. Forsham, P. H.: Squibb Clin. Res. Notes 2:5 (Dec.) 1959. 9. Larson, E.: Op. cit. 2:10 (Dec.) 1959. 10. Kirkendall, W. M.: Op. cit. 2:11 (Dec.) 1959. 11. Yu, P. N.: Op. cit. 2:12 (Dec.) 1959. 12. Weiss, S.; Weiss, J., and Weiss, B.: Op. cit. 2:13 (Dec.) 1959. 13. Moser, M.: Op. cit. 2:13 (Dec.) 1959. 14. Kahn, A., and Greenblatt, I. J.: Op. cit. 2:15 (Dec.) 1959. 15. Grollman, A.: Monographs on Therapy 3:1 (Feb.) 1960.

'NATURETIN' IS A SQUIBB TRADEMARK.

Co-Pyronil®
keeps most allergic patients symptom-free around the clock

Many allergic patients require only *one* Pulvule® Co-Pyronil every *twelve** hours, because Co-Pyronil provides:

- Prolonged antihistaminic action
- Fast antihistaminic action

plus

- Safe, effective sympathomimetic therapy

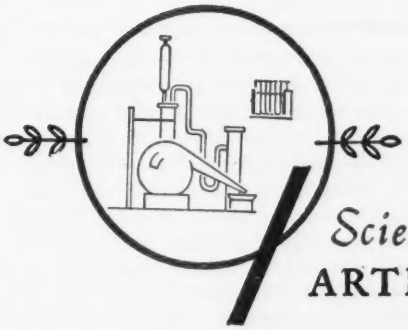
*Unusually severe allergic conditions may require more frequent administration. Co-Pyronil rarely causes sedation and, even in high dosage, has a very low incidence of side-effects.

Supplied as Pulvules, Suspension, and Pediatric Pulvules.

Co-Pyronil® (pyrrobutamine compound, Lilly)

ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U.S.A.

058012



Scientific
ARTICLES

Coarctation of the Aorta

A Presentation of 110 Cases

WILLIAM A. REED, M.D., *and*
C. FREDERICK KITTLE, M.D., *Kansas City*

ALTHOUGH ORIGINALLY DESCRIBED IN the 18th century by Morgagni and Paris, coarctation of the aorta remained essentially a clinical curiosity until 1945 when its surgical correction was first successfully accomplished. The intervening years since 1945 have seen prompt diagnostic recognition of this lesion and a negligible mortality in those patients treated surgically.

Coarctation of the aorta (*coarctatio,* Latin, tighten together) is a life shortening lesion which may result in death by several means: aortic rupture, subacute bacterial endocarditis, or the sequelae of hypertension—heart failure and cerebral vascular accidents. Although 70 per cent of 304 patients studied by Abbott and Riefenstein reached the age of 40 years, the average life span was only 30 years.

Two Basic Types

Bonnet differentiated two principle types of coarctation of the aorta and devised the terms—"adult" and "infantile." The "adult" type he defined as a relatively short aortic stricture at or just distal to the ligamentum arteriosum. The "infantile" type he described as a preductal stricture associated with patency of the ductus arteriosus into the distal aorta. Other more recent classifications[4, 16, 23, 30] have been devised according to the location of the aortic narrowing, the degree of collateral circulation, and whether a ligamentum or a ductus arteriosus is present.

A particular clinical group is constituted by infants suffering from the effects of coarctation of the aorta in contrast to those individuals who manifest symptoms much later in life. Survival beyond the first year of life when symptoms appear in infancy is unusual.[11, 17, 24, 33, 41]

We should like to review our experiences with coarctation of the aorta at the University of Kansas Medical Center from 1950 through 1959. For the purposes of clinical, diagnostic, and operative features we have divided the patients into two major groups:

Two Divisions

Type I, consisting of 85 patients in which the coarctation was located at or distal to a ligamentum or ductus arteriosus. This is the so-called "adult" or the post-ductal type of coarctation *(Figure 1)*. Seventy-one of these were operated upon.

Type II, consisting of 25 patients in which a ductus arteriosus was found distal to the coarctation: the "infantile" or preductal coarctation *(Figure 2)*. Ten of these were operated upon.

Six other patients have been observed but have not been classified since they were not operated upon and the exact location of the coarctation is not known.

From the Department of Surgery, University of Kansas Medical Center, Kansas City, Kansas.

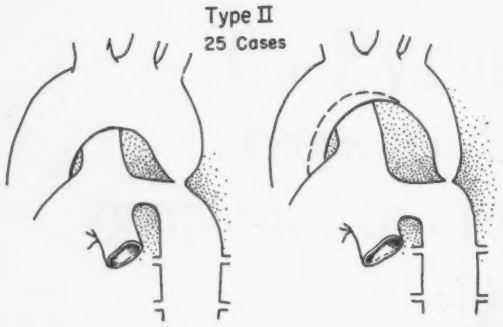


Figure 2. Usual situation encountered in "infantile" coarctation. Note that the entire aortic arch may be narrowed.

Etiology

Bremer and others[14] considered the post-ductal type of coarctation (Type I, *s.v.*, or "adult") a faulty result of ductus arteriosus closure with extension of its obliteration into the aorta. Although applicable in most instances this would not explain those coarctations in which the ductus remains or where the aortic stricture is located some distance from the ligamentum. The most widely accepted theory is that both types of coarctation arise from a defect in the development of the fourth aortic arch and its junction with the dorsal aorta and the sixth aortic arch.[1, 11]

Diagnosis

In Type I, the "adult" or the post-ductal coarctation, one is impressed by the absence of symptoms or their minimal degree in most patients. Generally a heart murmur or an elevated arm blood pressure has been detected during a routine physical examination. When symptoms do exist and these are most common over the age of 20 years, headache, fatigability, flushing of the face, and palpitations are the symptoms most frequently mentioned. Occasionally leg cramps may be noted. A high index of suspicion and an awareness of this diagnosis on the part of the family physician when hypertension is found in young individuals is the one most essential element in diagnosing coarctation of the aorta.

The findings in our patients are summarized in *Table I.* Absent or decreased lower extremity pulses, elevated arm systolic blood pressures in comparison to leg pressures (more than 20 mm. of mercury), a systolic murmur along the left sternal border heard also in the interscapular area, and retinal changes[18] were found in most of the patients *(Figures 3 and 4).* Evidences of collateral circulation were noted in the subcutaneous areas in older individuals in the upper

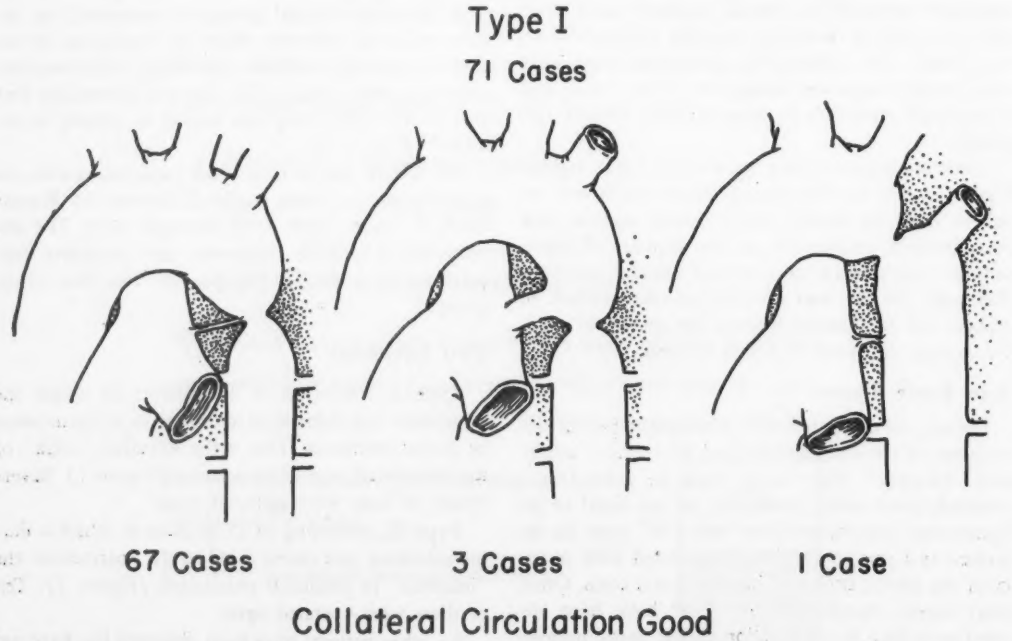


Figure 1. The anatomic arrangement found in the patients operated upon is shown. A ductus was found in three patients. Abnormalities of the post-stenotic area are not pictured.

part of the thorax. Notching of the inferior surface of the ribs (third to eighth) was found on chest roentgenograms in 60 per cent of this group. This radiologic finding is almost pathognomonic for coarctation of the aorta, other causes of it being extremely rare. Notching is uncommon in the young individuals but generally is present in patients over 15 years of age. Other X-ray findings[10] such as diminutive aortic knob, a figure three sign, and a curvaceous internal mammary artery outline in the lateral film have been described.

The electrocardiogram generally reveals evidence of aortic obstruction as reflected by left ventricular hypertrophy or strain. This was present in 63 per cent of our patients. Additional diagnostic information can be obtained by phonocardiography, ballistocardiography,[27] and simultaneous brachial and femoral arterial pulse tracings. In the last a delay in femoral arterial pulse contour is present. Angiocardiography has been used but generally is not necessary for this diagnosis.

Type II—"infantile" or preductal coarctation—is generally brought to attention when an infant presents with heart failure. The frequent association of other grave congenital abnormalities[2, 11] often makes the diagnosis confusing and difficult. *Tables II and III.* Blood pressure by the flush technique in the upper extremities is generally higher (more than

TABLE I

INCIDENCE OF FINDINGS IN 85 PATIENTS WITH TYPE I COARCTATION WHICH WERE HELPFUL IN ESTABLISHING DIAGNOSIS

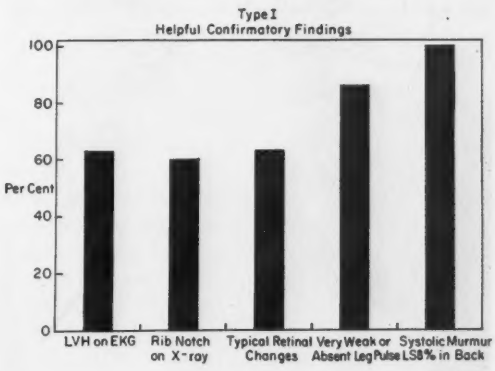


TABLE II

ASSOCIATED ABNORMALITIES IN TEN PATIENTS WITH TYPE II COARCTATION TREATED BY OPERATION. INCIDENCE OF GRAVE ASSOCIATED LESIONS AS REPORTED BY OTHERS IS SHOWN

Type II Coarctation (Treated by Operation) Coexisting Deformities

Case No.	*Hypoplasia Aortic Arch*	*Fibro-elastosis*	*Valve De-formity*	*Renal De-formity*	*T-E Fistula*	*Mon-golism*	*VSD*	*Super Numery Digits*	*Rt. Arch*	*ASD*	*A-P Window*
1	+	+	+								
2				+	+	+					
3	+		+				+				
*4											
5							+				
6								+	+		
7							+				
8		+									+
9											
10			+				+			+	
	2	2	3	1	1	1	4	1	1	1	1

* No Post-mortem Examination
Two Patients Living
Avg. Age: 3 wks.

Grave Assoc. Lesions	44% (25 Cases)	Minor Assoc. 20%	Total 80%
Grave Assoc. Calodney	27%		
Grave Assoc. Abbott	60%	Minor Assoc. 33%	Total 77%
Grave Assoc. Blocford	25%		

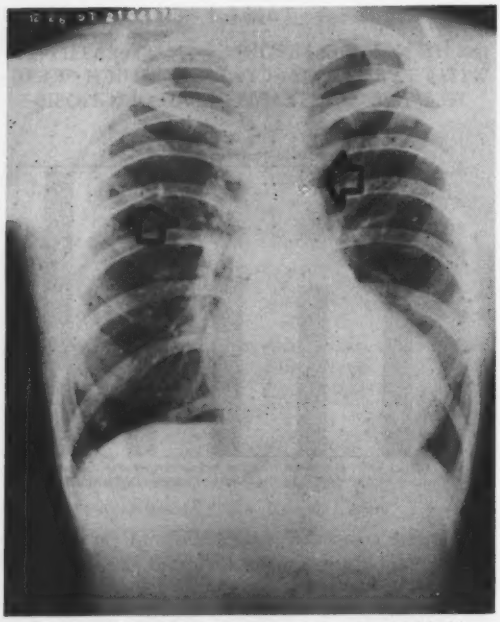


Figure 3. Chest roentgenogram of patient with Type I coarctation showing rib notching (left), figure "3" sign (right) and prominent left ventricle.

20 mm. of mercury) than in the lower extremities although this finding may be absent when severe heart failure is present. If the ductus is sufficiently large cyanosis of the lower extremities can be noted. Retrograde aortography or angiography is frequently necessary for confirmation of this diagnosis.[31] The electrocardiogram may show right, left, or combined ventricular hypertrophy, but is generally grossly abnormal.

Indications for Operative Treatment

Prior to 1945 no palliative or curative treatment was available for coarctation of the aorta. Within several months Crafoord of Stockholm and Gross of Boston both published descriptions of aortic resection with end-to-end anastomosis. Other methods[6, 42] of operative treatment such as anastomosing the subclavian artery to the distal aorta have been described, but the treatment of choice remains essentially as that outlined by Crafoord and Gross in their original articles. The immediate successes and encouraging results[4, 12, 33, 37, 39] in these early cases focused attention on this congenital anomaly. By 1956 Rumel *et al.* were able to collect 1,601 cases treated surgically and noted relief of hypertension in 96 per cent with an operative mortality within three months postoperatively of only 8.6 per cent. In our group of 71 patients there was one death within three months postoperatively.

In Type I coarctation all patients should be considered for operation unless definite reasons are present to avoid a surgical procedure. Advanced age *per se* should not be considered as a contraindication.[28, 34, 35]

In Type II coarctation—preductal or "infantile" type—considerable difference of opinion exists as to the operability of these patients. While some reports have indicated moderate success with operative and medical treatment, others have reported extremely high mortality with discouraging results.[11, 41] Although operation is attended by high risk intervention appears worth while in the infant not doing satisfactorily on medical treatment. Relief of intractable heart failure due to an obstructive lesion of the aorta can frequently be accomplished only by surgical excision of the narrowed segment. Accompanying defects although often present may result in the subsequent death of the individual, but resection can provide sufficient palliation to allow other defects to be cared for later.

Surgical Technique

A standard left posterolateral thoracotomy incision entering the pleural cavity through the bed of the resected fourth rib or the fourth interspace is used. The aorta is mobilized from proximal to the left subclavian artery to a point distal to the coarctation. Often the first two pairs of intercostal arteries are aneurysmal and constitute a potential source of severe hemorrhage. These are best ligated and transected. The ligamentum or ductus arteriosus is transected and sutured. The area of stricture is excised at the point where the largest matching diameter of proximal and distal ends can be obtained *(Figure 5)*. End-to-end anastomosis, using two or three continuous sutures 4-0 or 5-0 silk supplemented by interrupted sutures is the method of choice. This was used in 58 in-

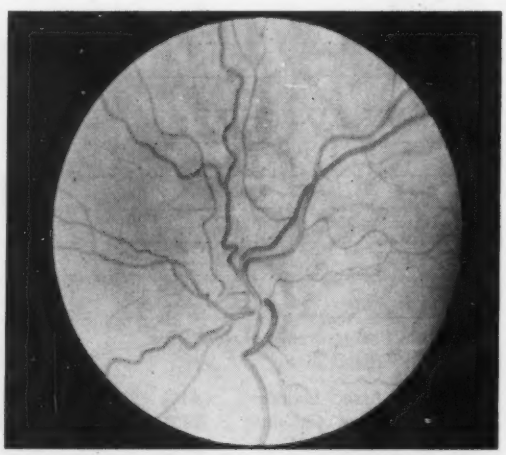


Figure 4. Photograph of the fundus of a patient with Type I coarctation. "Corkscrew" tortuosity of the arterioles in absence of crossing changes was the most reliable feature.

stances. In 10 patients because of long strictured areas or poststenotic aneurysmal dilatation aortic grafts were necessary. In eight patients homografts were used and in two patients synthetic Dacron® grafts were inserted *(Figure 6)*.

Subclavian-aortic anastomosis was done twice in our early efforts, but is no longer used.

In approximately 30 per cent of our adult patients trimethaphan camphorsulfonate (Arfonad®) was given to induce hypotension (80-100 mm. mercury systolic) during dissection about the great vessels and during the anastomosis. Care was taken not to prolong the use of this hypotensive agent beyond 20 or 30 minutes.[9]

After the anastomosis had been accomplished the distal clamp was gradually released. If hemostasis was satisfactory the proximal clamp was then removed. If the blood pressure fell precipitously the proximal clamp was reapplied and slowly released over a longer period of time. After meticulous homostasis had been secured the mediastinum and pleura were approximated and the chest closed in the usual fashion with intrapleural drainage.

Results

Type I. *(Figure 7)* Of 85 patients 71 were subjected to operation. Seventy had resection of the coarctation and in one patient exploration only was done. The majority of the operated patients made an uneventful recovery. In several a syndrome of abdominal pain accompanied by hypertension of several days' duration was noted. This has been described by others[15, 37, 40] as a complication following resection of coarctation of the aorta. We did not find laparotomy necessary in our patients although others have believed an acute abdominal condition to be present and have done laparotomy. In these patients there has been histologic evidence of arteritis of the intra-abdominal vessels and some actual gangrene of the ileum successfully treated by resection. Numerous theories have been postulated to explain this phenomenon.[15, 40]

One of our 71 patients died following operation. Disruption of the aortic anastomosis occurred suddenly on the 11th postoperative day. No evidence of infection was found at postmortem examination.

TABLE III

ASSOCIATED ABNORMALITIES FOUND AT AUTOPSY EXAMINATION IN 15 PATIENTS TREATED WITHOUT OPERATION (TYPE II COARCTATION)

Type II Coarctation (Not Operated Upon) Coexisting Abnormalities

Case No.	*ASD*	*VSD*	*A-P Window*	*Hypoplasia Left Ventricle*	*Hypoplasia Aortic Arch*	*Renal Deformity*	*Ovarian Agenesis*	*Anomalous Coronary Artery*	*Esophageal Atresia*	*Hamartoma of Heart*	*Valve Deformity*
1											
2				+	+						
3				+	+						+
4	+	+				+					+
5											
*6						+	+				
7					+						
8											
9						+	+	+			
10			+			+	+	+			
11				+	+				+		+
12											
13	+										
**14											
	+	+								+	
	3	2	1	5	4	5	4	3	1	1	3

* Turner's Syndrome

** Died of SBE

Av. Age: 3 wks.

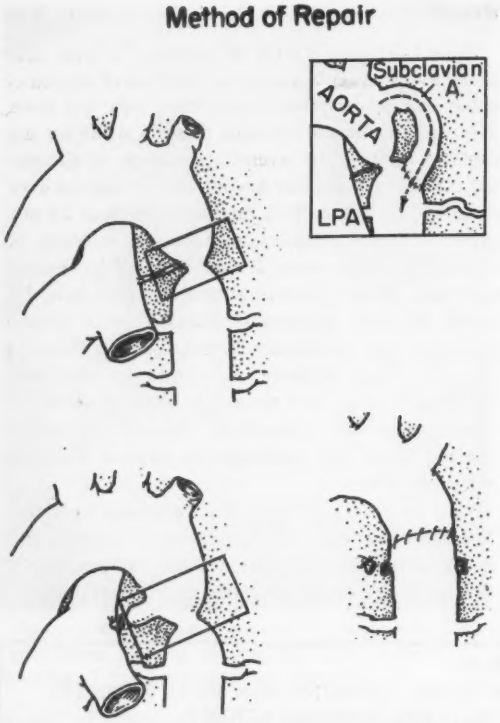


Figure 5. Two patients were treated by subclavian-aortic anastomosis (upper right). Fifty-eight patients were treated by excision (left) and end-to-end anastomosis.

In one of the two patients in which a subclavian-aortic anastomosis was done gangrene of the left forearm developed necessitating amputation.[26] Two patients developed hemothorax in the postoperative period; one of these responded satisfactorily to medical treatment, and one required subsequent decortication.

In the last 56 consecutive patients with resection for coarctation of the aorta there has been no mortality and no appreciable morbidity.

The surviving 70 patients have been followed from two months to ten years. Their average preoperative blood pressure in the arm was 165/100 and in the leg 115/85, pressures being higher with older age. The average postoperative blood pressure in the arm was 135/85 and in the leg 140/90.

The patient who was explored only survives with hypertension. Of the two subclavian-aortic anastomoses, one was relieved of hypertension and survives; the other had no relief of his elevated pressure and died eight years postoperatively of heart failure. One female, 28-years-old, with severe associated aortic stenosis had no lowering of her systolic blood pressure and died suddenly 11 months after resection, presumably from a sudden cardiac arrhythmia. Autopsy disclosed a bicuspid aortic valve with stenosis. Three patients operated upon in 1954 had no change in their preoperative arm pressures and in retrospect probably had insufficient resection of the coarcted segment. Another patient did not return to normotensive levels, but did change from a preoperative pressure of 210 systolic to a postoperative pressure of 160. With these exceptions the remainder returned to near normotensive levels of blood pressure.

Headaches, flushing of the face, cold feet, and other symptoms were relieved postoperatively when the blood pressure became normal. The electrocardiograms have lost the pattern of left ventricular strain, although changes of left ventricular hypertrophy have usually remained.

Thirteen of the surviving patients (13 of 70) have associated cardiac lesions: a deformed aortic valve, 11 patients and a ventricular septal defect, two. In one patient the aortic stenosis became symptomatic following coarctation repair. Aortic valvotomy was recommended and done using extracorporeal circulation with relief of this obstruction.* One patient died suddenly from her aortic stenosis *(s.v.)*, the other patients with aortic stenosis and ventricular septal defect are being followed. Undoubtedly some of them will require definitive repair of their defects in the future.

* National Heart Institute—Dr. Andrew G. Morrow.

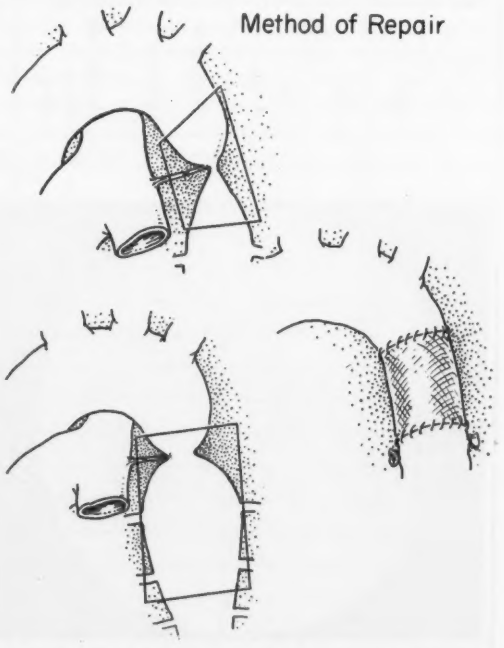


Figure 6. The long tapering stricture or post-stenotic aneurysmal dilatation was treated by vessel grafts (10 patients).

The incidence of associated aortic valve deformity was discussed by Abbott and stated to be 25 per cent. Although some have recommended or suggested the use of prophylactic antibiotics in these patients, we have not done this and there has not been any evidence to justify such a procedure.

Two patients had an associated Turner's syndrome,[43] a complex endocrine abnormality occurring in females and consisting of infantilism (small stature), webbed neck, cubitus valgus, and often cardiovascular anomalies. Although ostensibly females these individuals are chromosomal males.[20] Albright was the first to call attention to this abnormality in patients with coarctation.

Aortic homografts were used in eight patients. In two of these observed five and nine years postoperatively there is definite radiologic evidence of calcification. None have shown aneurysmal changes, but their ultimate fate is questionable. Our present choice, for this reason and for their availability, in vessel grafting is knitted dacron.

Type II. Only 10 of these 25 patients were subjected to operation. Of the 10 there were two survivors, the others dying in the immediate postoperative period or within one month of operation. The usual cause of death was congestive heart failure generally due to associated cardiac abnormalities or the complications of this age group such as postoperative atelectasis, pneumonia, etc.

Of the two surviving patients one is doing well two years postoperatively although the clinical findings of a ventricular septal defect are present. The other had a Type II coarctation as well as mitral stenosis. Definitive treatment was not attempted.

The other 15 patients died during medical management. In at least two instances operation had been planned with the patient dying only several hours before the scheduled resection. Obviously this group of patients presents a serious prognosis. We cannot accept the therapeutic nihilism recently advocated by those who state that operation is not indicated in these patients. The occasional patient that can be salvaged is worth the high mortality in this group. Resection of the coarctation should be viewed as a palliative procedure, tiding these infants over until definitive repair can be done of the other cardiac defects that are usually present.

Six patients have not been classified as to either

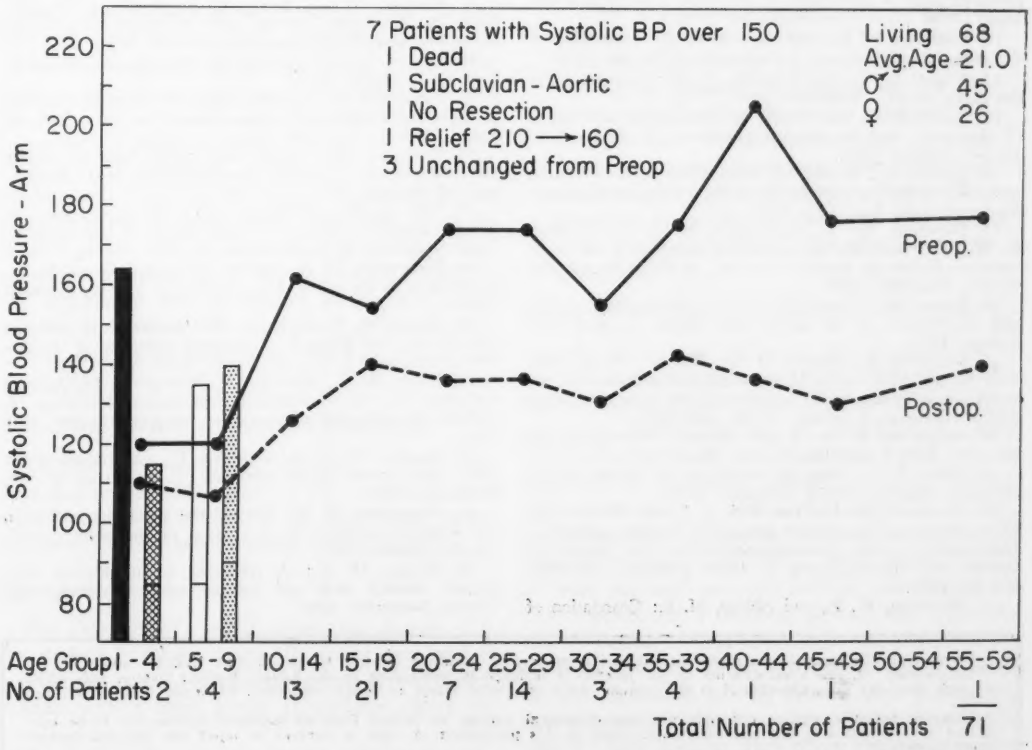

7 Patients with Systolic BP over 150
1 Dead
1 Subclavian - Aortic
1 No Resection
1 Relief 210 → 160
3 Unchanged from Preop
Living 68
Avg. Age 21.0
♂ 45
♀ 26
Preop.
Postop.
Systolic Blood Pressure - Arm
220
200
180
160
140
120
100
80
Age Group 1 - 4 5 - 9 10 - 14 15 - 19 20 - 24 25 - 29 30 - 34 35 - 39 40 - 44 45 - 49 50 - 54 55 - 59
No. of Patients 2 4 13 21 7 14 3 4 1 1 1
Total Number of Patients 71

Figure 7. Summary of results in Type I patients treated by operation showing decrease in systolic blood pressure following operation. The average arm and leg pressure preoperatively (two bars on left) and postoperatively (two on right) show rise in leg blood pressure and fall in arm blood pressure following operation.

Type I or Type II. All are under the age of six years and doing well on continued observation. Five are probably Type I coarctations and operation has been deferred for a more optimal age.

References

1. Abbott, M. E.: Congenital heart disease. Nelson Loose Leaf Med., IV, 207, 1932.
2. Abbott, M. E.: Congenital cardiac disease. Monograph in Osler and McCrae's System of Medicine, ed. 1, 1908, IV, 323; ed. 2, 1915, IV, 323, ed. 3, 1927, IV, 612.
3. Albright, F., Smith, P. H., and Fraser, R.: A syndrome characterized by primary ovarian insufficiency and decreased stature, Am. J. Med. Sci. 204:625, 1942.
4. Bailey, C. P., Lemmon, W. M., and Mosser, B. G.: Experience with coarctation of the aorta. Am. J. Cardiology. Vol. IX (6) 775, Dec. 1959.
5. Baronofsky, I. D., and Adams, J. P.: Resection of an aortic coarctation in a two week old infant, Ann. Surg. 139:494, April 1954.
6. Blalock, A., and Park, E. A.: Surgical treatment of experimental coarctation of the aorta, Ann. Surg. 119:445, 1944.
7. Bonnett, L. M.: Rev. de med. 23:108, 1903.
8. Bremer, J. L.: Coarctation of the aorta and the aortic isthmus, Arch. Path. 45:425, April 1948.
9. Brock, R. C.: Editorial note after article by Lepere, R. H. Reaction hypertension as a postoperative complication of resecting the aorta for coarctation, Guys Hospt. Reports 106:128 (No. 2), 1957.
10. Bruwer, A., and Pugh, D. G.: A neglected roentgenologic sign of coarctation of the aorta, Proc. Staff Meet. Mayo Clinic 27:377, September 24, 1952.
11. Colodney, M. M., and Carlson, M. J.: Coarctation of the aorta in early infancy, J. Pediatrics 37:36, July 1950.
12. Clagett, O. T., and Jampales, R. W.: Coarctation of the aorta, 63:337, September 1951.
13. Crafoord, C., and Nylin, G.: Congenital coarctation of the aorta and its surgical treatment, J. Thor. Surg. 14:347, October 1945.
14. Craigie, D.: Instance of obliteration of aorta beyond arch. Illustrated by similar cases and observations, Edin. Med. and Surg. Jour. 427, 1841.
15. Downing, D. T., Grotzinger, P. J., and Weller, R. W.: The syndrome of necrotizing arteritis of the small intestine following surgical therapy, A.M.A. Dis. Child. 96:711, December 1958.
16. Evans, W.: Congenital stenosis (coarctation) atresia and interruption of the aortic arch, Quart. J. Med. 2:1, January 1933.
17. Goldring, D., Behrer, M. R., Thomas, W. A., McCoy, E., and O'Neal, R. M.: Clinical and pathological observations in infants with coarctation of the aorta and patent ductus arteriosus, J. Pediat. 51:18, July 1957.
18. Granstrom, K. O.: Retinal changes in coarctation of the aorta, Brit. J. Ophthal. 35:143, March 1951.
19. Gross, R. E.: Surgical correction for coarctation of the aorta, Surgery 18:673, December 1945.
20. Grumbach, M. M., Van Wyk, J. J., and Wilkins, L.: Chromosomal sex in gonadal dysgenesis (ovarian agenesis): Relationship to male pseudohermaphrodism and theories of human sex differentiation, J. Clin. Endocrin. 15:1161, October 1955.
21. Hamilton, W. F., and Abbott, M. E.: Coarctation of the aorta of the adult type, Am. Heart J. 3(4):381, April 1928.
22. Hamilton, W. F., and Abbott, M. E.: Coarctation of the aorta of the adult type, Am. Heart J. 3(5):574, June 1928.
23. Johnson, R. L., Terency, C., Wiglesworth, F. W., and McRae, D. L.: Coarctation of the aorta complicated by patency of the ductus arteriosus. Circulation 4:242, August 1951.
24. Keith, J. D.: Congestive Heart Failure, Pediatrics 18:491, 1956.
25. Kempton, J. J., and Waterson, D. J.: Coarctation of the aorta presenting as cardiac failure in early infancy, Brit. M. J. No. 5042:442, August 1957.
26. Kittle, C. F., and Schafer, P. W.: Gangrene of the forearm after subclavian arterio-aortostomy for coarctation of the aorta, Thorax 8(4):319, December 1953.
27. Kittle, C. F., Reissmann, K. R., Dimond, E. G., and Schafer, P. W.: Torsion ballistocardiography in cardiovascular surgical patients, J. Thor. Surg. 27:107, February 1954.
28. Kittle, C. F., Crockett, J. E., and Dimond, E. G.: Coarctation repair with relief of hypertension, J.A.M.A. 168:2006, December 13, 1958.
29. Lang, H. T., and Nadas, A. S.: Coarctation of the aorta with congestive heart failure in infancy, Pediatrics 17:45, January 1956.
30. Lemmon, W. M., and Bailey, C. P.: A new classification for coarctation of the aorta, J. Thor. Surg. 35:291, March 1958.
31. McAfee, J. G.: Angiocardiography and thoracic aortography in congenital cardiovascular lesion, Am. J. Med. Sci. 229:549, May 1955.
32. Morgagni, J. B. (1769): The seats and causes of disease, trans. B. Alexander, London Epis 18, Art. 6.
33. Mustard, W. T., Rowe, R. D., Keith, J. D., and Sirek, A.: Coarctation of the aorta with special reference to the first year of life, Ann. Surg. 141:429, April 1955.
34. Olesen, O. L.: Coarctation of the aorta: Danish Med. Bull. 4:33, March 1957.
35. O'Sullivan, W. D., and Glenn, F.: Contraindications to the surgical therapy of coarctation of the aorta, Ann. of Surg. 142:909, December 1953.
36. Paris, M.: Re' trecessement considerable de l'aorte pectorale observe' a' l'Hotel Diece de Paris, Jour. de Chirurgie de Desault 1791, 11, p. 107.
37. Ring, D. M., and Lewis, F. J.: Abdominal pain following surgical correction of coarctation of the aorta, J. Thor. Surg. 31:718, June 1956.
38. Reifenstein, G. H., Levine, S. A., and Gross, R. E.: Coarctation of the aorta, Am. J. Heart J. 33:146, February 1947.
39. Rumel, W. R., Bailey, C. P., Samsen, P. C., Waterman, D. H., and Bing, R. J.: Surgical treatment of coarctation of the aorta, J. Am. M. Assoc. 164:5, May 4, 1957.
40. Sealey, W. C., Harris, J. S., Young, W. G., Jr., and Calloway, A., Jr.: Paradoxical hypertension following resection of coarctation of the aorta, Surgery 421:135, July 1957.
41. Seaman, W. B., and Goldring, D.: Coarctation of the aorta with patent ductus arteriosus, J. Pediatrics 47:588, November 1955.
42. Shumacker, H. B.: Use of the subclavian artery in the surgical treatment of coarctation of the aorta, S.G.O. 93:491, October 1951.
43. Turner, H. H.: A syndrome of infantilism, congenital webbed neck and cubitus valgus, Endocrinology 23:566, November 1938.

Ownership: The Journal is a non-profit publication owned and published monthly by the Kansas Medical Society.

Subscription: A year's subscription to the Journal is included in membership in the Kansas Medical Society, with $2.00 of each member's dues apportioned to the Journal. Rates to others, except in foreign countries, $4.00 per year or 60c per copy.

Material: Scientific articles, editorials, and data of general interest are invited from all members. Articles are to be submitted on condition that they are contributed solely to this publication. A right is reserved to reject any material deemed unsatisfactory.

Manuscripts: Only manuscripts that are typewritten on one side, double spaced, and original copies can be accepted. Manuscripts will be returned upon request.

Advertising: All advertising contracts, and all copy from advertisers under contract are subject to approval of the editorial board. Copy should be received by the 15th of the month immediately preceding the month of publication.

Department of Medicine

University of Kansas Medical Center 1953-1960

E. GREY DIMOND, M.D., ***La Jolla, California***

This paper presents a review and definition of the activities of the Department of Medicine at the University of Kansas Medical Center from 1953 to 1960. Concepts of curriculum, method of staffing, efforts at teaching, and tradition, and finally research have been described. The Department has changed much in these seven years. From a small, homogeneous group of devoted men, it has elaborated and extended its activities until presently it represents a cadre of 32 full time staff men, 50 residents and fellows, and responsibility for more than 300 teaching beds.

Two hundred students are taught at these bedsides each year. The postgraduate training each year of 3,000 physicians in practice is shared by the Department. Twenty thousand patients are seen in the General Medicine Clinics, four thousand patients are admitted each year to the Medicine beds. This paper is a review of some of the basic concepts upon which this structure was assembled.

THE PURPOSE OF THIS paper is to report on the activities of the Department of Medicine at the University of Kansas. It is a report to the Physicians of Kansas describing the activities of this particular department. Although a Medical School is the whole of its many departments, the Department of Medicine at any school should be the central strength, giving balance and breadth to the school's activities; curriculum, research, patient care.

This report is a review of both the basic philosophy of the department and an outline of the accomplishments of the years 1953 to 1960. These were vigorous and exciting years, matching the era of the school's great growth and those who were a part of these years will long recall the pleasures and pains which we all felt at the beginning of the re-birth of our school: bringing life to and creating a new curriculum, planning and building a Medical Center, the exciting concept of the Kansas Rural Health Program, carrying on an immense postgraduate effort and the gathering of a staff. And as an inevitable part of all growth, a period of maturation.

To a great degree, the activities of the Department of Medicine paralleled the course of growth of the other departments, some earlier, some later. Medicine is now at the maturation level, still growing, consolidating, carrying out its role as the central, balancing department. But as happens in life, the excitement of the early 1950's must level off into a disciplined, responsible atmosphere. (And as in life, one recalls the more eventful days with nostalgia.)

The First Tenet: Student Curriculum

To give the Department's teaching effort a constant and recognizable theme, it was essential to have a basic concept of the role of the Department in the student's development towards physicianhood.

The Juniors

The Department's initial, significant contact with the student is made during the junior year and it was decided to hold to a central theme of *daily* ward rounds, with a small group of students (five) assigned to one senior staff man. This "unit of instruction" bases its experience on the daily course of disease as it is seen in a 20 bed unit; the students have meticulous bed to bed rounds made by their single, responsible staff man, for a two hour period. This is supported by afternoon chart conferences. The student has this unit of beds as his single environment and all patients, regardless of status or disease, are cared for in such units. These "units" (five students, 20 beds, one staff man, one resident, one intern) are kept together for a six week period. This gives the student certain distinct advantages: the chance to see a patient and his illness run its course, the chance for the student to identify himself as a personality, and consequently the chance for a staff man to clearly "know" each student. This offers protection against the fragmentation which is inevitable with an increased student body and an increased staff.

Each student, after six weeks, moves to a second

Doctor Dimond was professor of medicine and chairman of the department when this report was made. He is now head of the Institute for Cardio Pulmonary Diseases of the Scripps Clinic and Research Foundation at La Jolla, California.

unit and under a new staff man has a second intensive experience, entirely similar in format, but differing in the final essential: the observation of how another senior staff man practices medicine. This, then, has been the unique idea which we have held to in medicine: a small, cohesive teaching group, together long enough to become personalities, not faces, and a demonstration by precept of how a senior internist practices medicine.

This basic tenet of the curriculum was responsible for much of the developing pattern of the department. The increased size of the student body required at least five of these units to be in operation at all times. The type of instruction which was implied required broadly trained internists, which meant we had to maintain two distinct groupings of staff within Medicine—the general internists for the junior curriculum and a group of specialists to give strength to the postgraduate and residency programs.

The junior "unit" required a minimum of 120 general medicine beds and sufficient turnover to give these students 50 new patients in a 12 week period. By establishing affiliations with the Kansas City Veterans Administration Hospital and with Menorah Hospital, we were able to gain the additional skillful staff and general medicine beds which were essential.

The Seniors

Medicine, as a department, again was responsible for the students' experience for 12 weeks during their senior year. Here we decided to make a considerable change of pace for six weeks and during this time the senior is assigned to an office in the General Medicine Out Patient Clinic and each day is supervised while he mimics as closely as possible the office practice of medicine. This is, of course, a synthetic effort, but it provides the student with a great degree of personal, initial responsibility. Each will see perhaps 120 patients during this time. To augment the rigid, single-physician instruction of his junior year, the General Medicine Clinic is attended by competent internists and generalists from not only Kansas City, but Lawrence, Leavenworth, Atchison, Manhattan, Osawatomie, Concordia, etc. Every attempt is made to give the student a chance to develop his own personal approach to medicine, but with available supervision.

For the final six weeks that a student has with the Department, he is allowed his choice of any elective. Here he has a chance to work closely with any of the specialty areas: Neurology, Chest, Cardiology, Metabolism, Gastroenterology, Hematology. This is a "unit" experience again, during which time he is assigned to an 11 bed unit, with a single staff man, resident and intern.

Throughout the students' experience on the hospital floors in Medicine, the emphasis is placed on teaching by demonstration—upon preceptorship. To practice medicine, daily, year after year, under the close scrutiny of curious students, inquiring interns, and skeptical residents is an exhausting, productive role. If Medicine has been successful as a teaching unit, it has been because of the original good fortune in having on the staff superb, dedicated general internists.

The first tenet of the basic philosophy then was *small group, single physician, bedside instruction,* augmented by an exposure to office medicine and specialty medicine.

The Second Tenet: The Residency Program

The second tenet related to the residency program.

Just as the Department of Medicine should be the basic strength of medical school, so is the real strength of the Department in its Residents. To build a residency program which would attract the highest quality house staff is the essential requirement of any university teaching program. Without a house staff no student program can possibly be successful. It is the Resident who provides the moment to moment, night and day constancy to the program. These men must be imbued by a desire for excellence, for erudition, for technical skills and with warmth towards patients, and sympathy and enthusiasm for the students. To ask all of this from a man for three long years at a salary which *averages* $1,800.00 a year means that the Department must make the quality of this particular program *superb*. Residents are mature men, all are at least one year beyond medical school and many have had years of practice or military service. They come to the department of their own volition, not as students following the required curriculum. Their own classmates have already entered practice. A good residency is not an easy experience and a good Resident should have little idle time. All of these facts serve to make the Resident in Medicine a member of an elite corps. Such was the philosophy of the Department—and the Residents in Medicine during these years have been a group of remarkably high caliber.

The Specialties

The obligation of the Department to offer a strong residency program was in part responsible for the building of the subspecialty areas. The initial allocation of beds to the General Medicine area for junior student instruction required just half of the bed space assigned to Medicine, the remaining half of the beds were divided into the specialty areas.

An additional 120 beds at the Kansas City VA Hospital were used for the specialties. This division of both staff and beds into equal halves, general

medicine and specialties, has proved a useful balance. A constant criticism of university medicine is its overspecialization. By our division we have maintained the tremendous value of the specialty areas for patient care, residency training, and postgraduate teaching—yet we have had a strong general medicine area as a basis for the students' training.

The Third Tenet: Continuing Education

As the two basic ideas relating to the medical students and to the Residents fell into place, the Department identified its third basic tenet in giving every possible effort and thought to carrying out a "continuing education" program for the man in practice. This area has not been by tradition the responsibility of a medical school. Kansas as a medical school has been a national force in this area, and a primary source of strength in the Kansas program has been the Department of Medicine. Each year the Department has devoted time and talent to this program; the amount of time actually given in planning, organization and participation can only be estimated, however the actual *teaching* time (which would be but a fraction of the overall participation) can be appreciated by a listing of the courses and hours of instruction by Medicine in postgraduate medicine in 1957-1958. The physicians' enrollment in these courses is also listed to indicate another valuation of the effort.

In addition to the courses at the home campus, the Department participated in the circuit courses. The circuit courses have become a popular Kansas tradition. The welding of state and school has merits beyond the original purpose of instruction. The program has a unique significance here in Kansas and the faculty participation is enthusiastic. This fact is even more impressive when one actually analyzes the physical demand on the faculty participants—and the actual man-weeks which the Department contributes to the program.

Course	*Actual Instruction Time* HOURS	*Audience*
Internal Medicine	30	186 (M.D.)
Pulmonary Disease	10	44 (M.D.)
Gastroenterology	13	51 (M.D.)
Cardiovascular	5	166 (M.D.)
Cardiac Auscultation	13	19 (M.D.)
Neurology	6	63 (M.D.)
Electrocardiography	30	755 (M.D.)
General Practice	16	142 (M.D.)
Ophthalmology	2	89 (M.D.)
Cardiovascular Nursing	6	192 (Nurses)
Medical Technology	17	359 (Technicians)
	148	2,066 Professional Personnel

The circuit teams are made up of four members and the circuit takes each man away from the campus for approximately one "work" week, twice a year. In 1957-1958, the Department was represented on the circuit by 12 full time members and each man was "on circuit" twice. This would represent therefore approximately 24 work-weeks, or approximately half of the time of one staff member of medicine. Five hundred and forty eight doctors were reached by the circuit courses.

To indicate the sustained effort of the Department, in the past eight years the School gave 244 postgraduate courses with a total enrollment of 25,044. Medicine participated in 165 of these and reached a graduate student body of 16,398.

The Fourth Tenet: Traditions

As the years passed, the Department evolved several items of "personality" which have served to strengthen it and give a feeling of tradition. These all have been important and have seemed to give "depth" to what was a relatively youthful department.

Ralph H. Major Lectureship, the Kansas Chair, the Annual Breakfast and Picnic.

First among these has been the establishment of the annual Ralph H. Major Lectureship. Beginning in 1954, and each year since, a national figure has been a guest of the Department, giving this lecture honoring Dr. Major. Participants have been Russell Cecil, James Means, Chester Keefer, Paul White, George Thorn, Tinsley Harrison and Eugene Stead. The Lectureship has evolved until it has become an annual June function at which a breakfast is given, the Lecture made, and the Kansas Chair presented to the Department Residents. On the afternoon of this day, the Department gives the annual picnic for friends and members.

The Examination

Another custom, which may provoke more painful memories in the minds of some readers, relates to the Department's strong belief in the value of an examination system. A vigorous program of oral and written examination has been followed through the years. Each portion of the examination has evolved into a standard ritual through the years and the Department has made the quality of these examinations a matter of pride. We have presented Medicine's share of the curriculum with the philosophy that being a physician is a demanding, devoted discipline and that one does not earn this privilege without hard work, attention to detail, mature motivation, intrinsic patient sympathy—and a final demonstra-

tion of factual knowledge by meeting the Department's examination requirements. We have considered the Department's approval of the student after 24 weeks spent with the Department in the junior and senior years, and after an oral and a written examination at the end of both the junior and senior years, as Medicine's documentation that a good physician was being created by the school.

Fifth Tenet: Research

Finally, as these items of concept each fell into place: curriculum, staffing, graduate teaching, acquiring of tradition, the Department matured and strengthened until it was able to begin making significant efforts at the research level. This was deliberately a final and later development; the teaching and patient care responsibilities came as primary obligations. However, by 1956, several major laboratories were operating within Medicine and at the time of this writing, research biochemical laboratories are active within the Pulmonary, Neurology, Gastroenterology, Metabolic, and Liver sections. A strong Enzyme Chemistry Laboratory, an Experimental Medicine section, a Hematology research section and artificial kidney research area are all at the productive stage. A very well developed Cardiovascular Laboratory has evolved. These areas have each taken their place in the teaching effort and at their specialized level are offering instruction to approximately 25 fellows each year in addition to the 24 residents in the clinical services.

Institute for Cardio Pulmonary Diseases
Scripps Clinic and Research Foundation
La Jolla, California

When Driving Watch These!

A "mechanically" safe car with proper safety equipment, however, is no substitute for a "mentally" alert driver who is the decisive factor between careful and careless driving. Psychological causes of traffic tragedies are among the worst hazards with which drivers have to contend, but recognizing them is fortunately more often than not the curing of them. These are among the most common:

1. *Over-confidence.* Taking for granted that pedestrians, other drivers, and the driver's own car and reflexes will all do the right thing at the right time.
2. *Pride in past record and faith in experience.* Many victims of fatal traffic accidents were never involved in a previous accident. As for experience, it breeds bad driving habits as well as good ones.
3. *Minimizing the seriousness of "little" accidents.* Failing to realize that a minor accident could well have been serious, and that the best way to avoid accidents is to shun the practices which cause "little" accidents.
4. *Self-righteousness,* which causes some drivers to try to "teach that wise guy a lesson." What's actually learned, of course, may be tragically different from what was intended.
5. *Impatience.* Taking needless chances, suppressing good judgment, getting into tight situations just to save a little time. This often goes hand-in-hand with inconsiderateness (cutting in too sharply, failing to dim headlights, taking chances that endanger other drivers).

But even drivers who try hard to avoid these psychological failings may be guilty of driving errors without realizing it. According to the 1958 Statistical Report of the New York City Police Department, these were the five driving errors most frequently implicated in New York City traffic accidents:

1. Following too close to another vehicle and consequently losing control contributed to 4,907 of the city's 36,681 traffic accidents that year.
2. Failing to give a pedestrian the right of way: 2,164 accidents.
3. Failing to give another vehicle the right of way: 1,686 accidents.
4. Failing to stop on signal: 886 accidents.
5. Improper turn (363), failing to keep to right (362), and disregard of signs (356) were close contenders for the fifth spot.

Driving faults so blatant that they could be labeled "dangerous driving" were implicated in only 59 accidents.

In the final analysis, the most important factor to steer you straight, is concern with your own condition as well as that of your car. There is no safety equipment that can substitute for careful, mentally alert drivers.

The Juvenile Diabetic

Medical and Psychiatric Aspects Of Regulation and Control

FREDERICK W. BLANCKE, M.D., ***Topeka***

Juvenile diabetes is frequently a disturbing factor in the life situation of the growing individual. Its discovery is often followed by delinquent behavior and psychoneurotic symptomatology. Deep-seated character problems may become activated. The general attitude of the family and the physician are discussed —how to deal with the emotional, delinquent and metabolic complications of this illness.

ON DECEMBER 17, 1957, A 14-YEAR-OLD, white, schoolboy was admitted to the Child Study Unit of the University of Kansas Medical Center. The patient was a short, dark-complexioned boy. His facial features revealed a pleasant smile, which at times assumed a deceptive innocence. At other times he revealed a sardonic, negativistic and scornful appearance. To all questions he answered: "that is my own business."

It was learned that the patient needed 80 units of NPH Insulin, daily, for control of his diabetes, that in spite of this, his diabetes was uncontrolled most of the time. He would run away from home periodically, he would overindulge in his eating habits, he would manipulate his insulin dosage or dilute his urine, he was incorrigible in his behavior and there were violent conflicts with the five siblings at home.

There has been a good deal of difficulty between the insecure parents. Between them there were violent outbursts of anger to the point of talking about separation. The child was often exposed to these arguments. The father was hospitalized at a psychiatric hospital for a period of three months during the early part of 1957. The family moved to Kansas City, Kansas, following his discharge. During the hectic period of re-establishment of this family unit in Kansas City, Kansas, the diabetes of our patient was discovered. This resulted in establishment of a pattern of over-protection at home, overwhelming our patient with care. This he strongly resented. Following this, and perhaps in reaction to his response, the mother became overly rejecting, complaining of the additional work that the boy's illness imposed on her and the cost this illness involved. She withdrew her affection and support from him.

With the combination of family strife, the blow to his self-esteem in knowing that he had a chronic illness which set him apart from other children, and the inconsistent reaction of the family to his illness, the patient's behavior became increasingly worse.

While the boy was in the Child Study Unit of K. U. Medical Center, his bloodsugar fluctuated between 500 milligrams per cent and 72 milligrams per cent. Sugar and acetone were irradically present in the urine, and on three occasions he suffered hypoglycemia with a fall in bloodsugar as low as 21 milligrams per cent. He ran away from the hospital many times, always to return. He indulged himself in knocking doorlocks off the ward doors and spraying water down the corridors. After three months he was dismissed from the Child Study Unit but readmitted two weeks later. His school had not accepted him because of his behavior. The parents were openly hostile to him and the boy himself pleaded with the hospital to be readmitted. Arrangement was made for long-term treatment at the Kansas Treatment Center for Children in Topeka, Kansas, on July 8, 1958.

Extensive psychiatric and medical evaluation began, social work with the family opened, and a treatment program developed. Bloodsugar studies revealed serious fluctuations, as high as 650 milligrams per cent on several occasions and as low as 100 milligrams per cent. We discovered at last that when not observed the patient would try to cut down on the amount of insulin and to dilute his urine. The management difficulties in relation to his behavior problems paralleled the difficulties in the control of his diabetes. We realized that we were dealing with metabolic, emotional, and delinquent problems in relation to control of the diabetes.

The psychiatric diagnosis established was: passive aggressive personality, aggressive type. The medical diagnosis was: diabetes mellitus, juvenile type.

This paper was presented to the American College of Physicians, the Regional Meeting in the Town House Hotel, on Friday, March 4, 1960, Kansas City, Kansas.

Five Per Cent Population

Of the approximately five per cent of the population of the United States of America which is homozygous for the recessive gene of diabetes mellitus, one-fifth are known diabetics. Some 100 thousand patients may be classified as "juvenile diabetics," when the illness is detected at the age of 15 years or under. There are some distinct differences between adult and juvenile diabetes. For instance we know that the area of safety between coma and hypoglycemic shock is narrow, much narrower in the juvenile diabetic than in the adult. We are also familiar with the explosive ketosis in the juvenile, ending rapidly in coma and sometimes death.

We internists in general feel that we are successfully treating our patient when we render him normoglycemic and normoglycosuric. This control however often results in emotional decompensation of this "diabetic robot" which will not be revealed in our offices because our sensitivity of observation may not be trained in this direction.

The importance of life experiences in the onset and course of diabetes mellitus has been a topic for discussion since Thomas Willis, some 300 years ago, noticed the sweet taste of urine of a few patients, and concluded that this disease was caused by a prolonged period of sorrow. William Menninger pointed out in 1935, that there is a correlation between changes in diabetic control and changes in mental states in a number of his patients. Marble-Fisher-Katz-Hinkle, and Wolf reported series of juvenile diabetics with severe emotional problems related to the diabetic illness. In these series from twenty-five to forty per cent of juvenile diabetics, chosen at random, experienced severe adjustment problems.

The diabetes of our patient was discovered during a period in his life in which his family was openly hostile toward him and had withdrawn love and affection. The literature continues to report cases of this nature. Both World Wars failed to show any correlation between severe stress of the soldier and the onset of diabetes.

Though extensive studies have failed to substantiate a "diabetic personality profile," the life stress is particularly taxing on our juvenile population. Metabolic changes in diabetes secondary to life stress are well documented. Psychiatric responses to the onset and course of diabetes also occur. The psychiatric responses however in turn constitute one of the main obstacles in "controlling the juvenile diabetic."

In stress, the diabetic may lose as much as 30 Grams of glucose in the urine per hour. Thirst, polyuria, ketosuria[3] and dehydration may start during and after a conflict situation. Provoked anger or nonverbalized rage of the diabetic causes the bloodsugar to fall, blood ketones to rise, diuresis to occur, and the RQ to fall toward 0.7. A similar response indeed as during fasting. Hinkle observed that these patients react to stress as if they were deprived. There is a similar reaction of metabolism to withdrawal of food as to the withdrawal of love and security.

The environment of the juvenile diabetic is structured with the parents, the siblings, and his friends. His disease is controlled with diet, insulin, regular urine examinations.

Parents

When the patient comes under treatment he will transfer to the physician the attitude and feelings with which he faces his parents. Unless the physician can learn to regard his patient's behavior as a symptom of the illness he will not be able to establish an effective therapeutic relationship. A unique relationship is needed. The physician must be able to recognize how the patient relates to the parents and the parents to the patient. The physician cannot afford to become angry at his patient like the parents and thus to induce protest against the therapeutic regime. He must know how the parents react to the illness in order to prevent duplication of their errors and patterns. After the discovery of the diabetes in the family the expression of the familial emotional difficulties is reflected in the management of the patient. The diet, the daily insulin injections, the urine examinations, weight control, all attain an irrational importance to the entire family and are often used to express pre-existing emotional difficulties within the family.

There are four major reaction patterns within the family: 1) *Danger Alerted Pattern:* all the activities, the regulation, the diet, and symptoms are anxiously watched. All the horrors of blindness—hardening of arteries—amputation—coma are a nightmare for the family. The child is continuously in a flight or fight reaction. His increased bodily concern renders him a psychological invalid. His dependency upon the parents may be increased beyond tolerance and his anger will be expressed against the parents and their control. 2) *Indulgent-Dedicated Pattern:* the parents, particularly the mother, feel they are somehow responsible for the child's illness, such as a fall in the past, a negligence on their part are irrational causes for the child's illness. This guilt and self-blame is expressed in the control of the child. They are waiting for the reward of their efforts to control the child in miraculous eventual recovery. The child will exploit this situation and develop the equally unfounded inner conviction that the parents are really responsible for this, his disability and

he will react according to this belief, manipulating the guilt of the parents and receiving gain from his disease. 3) *Perfectionist-Punitive Pattern:* control is achieved at all costs. The diabetic robot is never allowed to forget that he is a diabetic. His individuality is eventually submerged. Open rebellion is a protest that we see in juvenile diabetics admitted in ketosis, coma, or delinquent behavior. Menninger's patient told him "she would rather die than live such a restricted life." Her prevalence prevailed and she died in coma. The parents are boasting of their own accomplishment to control their own child, at the same time depriving the child of its own accomplishment in learning to take care of his disease. 4) *Neglectful-Disinterested Pattern:* this is unfortunately the largest group. The child is a burden who limits the parents' irresponsibility and self-satisfactions. The parents actually resent the child and the costs of his medical care. The onset of the disease is an additional blow to them, the parents, and another undesirable trait of the child.

Siblings

The siblings usually express a great amount of hostility toward the child that needs so much special attention. Their attitude is often extremely traumatic to the juvenile diabetic.

Family Members

Our patient's grandfather lived 20 years with diabetes and the patient told me several times that he certainly did not need regulation when his grandfather lived that long without any insulin or diet. The family members with diabetes are identification subjects for our patient. This is an important point in taking the history of the diabetic juvenile patient.

Friends

The juvenile hides the syringe very often and hides any possible evidence of the disease. He is afraid to be different, will often be excluded from gangs as being a "sissy," dependent on a syringe. Fantasies of not being masculine are very common in boys. Subcutaneous fibrotic nodules as a result of insulin injections are embarrassing to the girls.

Patient

To have an incurable disease without symptoms, to be an economic burden on the family, dependent upon injections and diet, be controlled by the parents, indeed this is a depressing fate.

The patient often has an irresistible longing for dependency in a face of this difficult future, or shows an open hostile reaction against the entire world that gave birth to him with a damaged body. His pride is hurt and his feelings of inadequacy and inferiority are awakened. Depending upon his reaction to the attitudes of the physician and the parents toward his disease he may have fantasies that he is going to die rather soon, that his body is like a house that may tumble down any minute. More often than many physicians suspect there is an underlying mood of dejection and hopelessness in the juvenile diabetic patient.

Food

The tense, depressed, and lonely adult may eat a piece of candy or some slices of cake. The juvenile in a similar situation may eat everything in the icebox and everything he can buy in the drug store. The "raid on the icebox" after a difficult situation is almost as characteristic a symptom as polyuria in the adult. This increased food intake just before the onset of ketosis and coma, creates the erroneous belief that overeating is causing this ketosis. The antiketogenic effect of carbohydrates has been well demonstrated. The argument between "metabolic perfectionism" and "dietary liberalism" is largely academic as you well know. Seventy per cent of the members of the diabetic association subscribe to the concept of "normoglycemia" as major objective of treatment. Twenty-three per cent have as goal "aglycosuria." Reports from large clinics indicate that only 13.5 to 22.4 per cent of their patients have been well controlled, as measured by normoglycemic standards. In effect, interviewing these patients very extensively, most patients seem to be on a free diet, regardless of what thir physician believes that they are eating. We have found in our studies that control of our diabetic juvenile, with restriction of the diet may cause severe emotional reactions. The restriction of food has actually the opposite result. His friends will get "special food" as chocolate bars, etc., for this "poor, deprived, hungry, and starved child." The patient now feels that he really has reason to be angry at the world and he will express his anger in the food raids that we all know. His food is given to him with the label that it may become poisonous when he eats too much of it. He in turn will use this food as a weapon to protest against his passive role in the family and to assert his independence.

The degree of success or failure of the diabetic of the dietary regime will depend upon the degree to which the physician understands how much his patient eats, likes to eat, and needs to eat. A free discussion is needed of the patient's appetite and his need to satisfy this.

In view of the statistical data, we do not stress the importance of a "rigid dietary control."

Physician

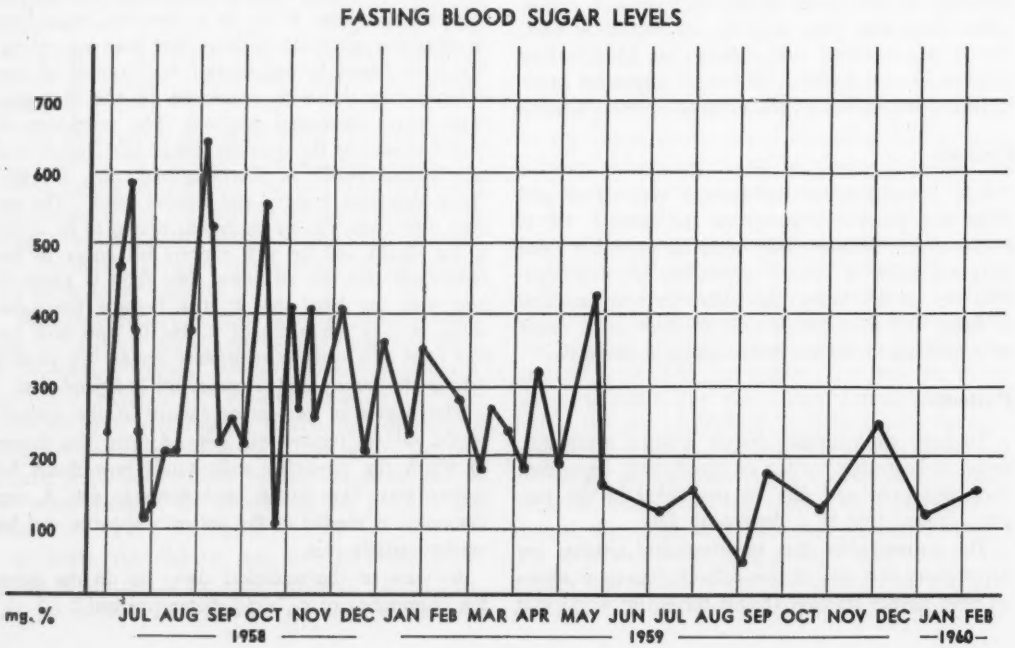
Finally we have to define the physician's role in the management of the patient's disease. A few simple rules are as important as the dose of insulin.

We do not unite with the parents against this child. We do not become angry about irregularities in the control. We do not compare our patient with a nonexisting ideal patient. We do not put the patient in such a position that he has to lie to us about discrepancies in statements by and about him. We do not retaliate to the patient's anger. We do not minimize nor exaggerate the importance of the disease. We do not give academic dissertations about the disease, and explain instead that insulin is one more tool that man has available to make life liveable. We realize that the patient does not feel sick but still needs treatment. We recognize the patient's achievement. We recognize that not all patients do equally well. We evaluate the degree of dependency the patient can tolerate without a need to assert his independence in an oppositional manner. We encourage social adaptation in group belonging and diabetic camps. Finally, the most important is that we accept him as a person and not as an object to be regulated.

Ketosis

A few words about the ketosis: nearly all juvenile diabetic coma is caused by the patient knowingly and purposefully disrupting his regulation. First goes the diet, next the insulin and last infection, often because the syringe was not sterilized. The purpose of this may be suicidal tendencies, withdrawal and refuge in the hospital and away from the conflict, manipulation of the parents or resentment about imagined or real rejections. In treating the juvenile diabetic it is very important to perform bloodsugar tests and urinalyses. However it is equally important to recognize the importance of words. Words are as important as the level of the bloodsugar of the patient. We listen to our patients. We listen particularly to two things: 1) We recognize early signs of protest: the breaking of appointments, unreasonable demands, unjustified criticism or revolt against the parents. 2) Angry—fearful—resentful—lonely and dejected feelings are *premetabolic signs of impending ketosis.*

Since his admission in the Treatment Center for Children our patient has steadily improved. His own intense aggressive feelings were projected toward me and I was seen as a very dangerous person, a dangerous person trying to control him with a needle and with insulin and a diet. Gradually he was able to express anger and hostility toward me. He is able now to verbalize his anger instead of acting out his anger in his diabetic disease. There has been no use of his diabetes to punish himself or others. Five months ago the patient expressed the wish to have a diet sheet made out. Our dietician prepared a sheet for him and the patient presented this to his mother to express his wishes to be reconciled with her. This approach toward his mother was quite characteristic



for this group of patients, that is, through the diet. The mother understood this symbolic message and has since been quite cooperative in working with our social worker. At present his diabetes is controlled with 50 Units of NPH Insulin and a free diet. His bloodsugar is fluctuating now between 280 milligrams per cent and 120 milligrams per cent with few hypoglycemic reactions *(Figure 1)*. His urine sugar is usually between four plus and negative. At no time has there been ketosis during the last six months. The patient is injecting his own arm with insulin under supervision and performs his own urine examinations.

The management of his diabetic disease is intrinsically interrelated with the psychotherapeutic management of his emotional problems. It is impossible in this type of patient to separate the two diseases.

References

1. Stress and Diabetes in Forensic Medicine. Cha a. P. Lamar, M.D. The Journal of the Florida Medicine Association, Febr. 1959.
2. Personality Disorder and Diabetes Mellitus. Staff Conference, Journal of the Tennessee State Medical Assoc., March 1959. Vol. 52. . . 3.
3. Correlation Between Emotions and Carbohydrate Metabolism to Two Cases of Diabetes Mellitus. Albrecht Meyer, Ludolf N. Bollmeier, and Franz Alexander. Psychosomatic Medicine, Nov. 1945. Vol. 7.
4. The Objectives of Modern Diabetic Care. Edward Tolstoy, M.D. Psychosomatic Medicine, Sept. 1948. Vol. 10.
5. The Role of Emotion in the Onset and Course of Diabetes Mellitus, George E. Daniels, M.D. Psychosomatic Medicine, Sept. 1948. Vol. 10.
6. An Approach to the Study of the Diabetic. Therese Benedak, M.D. Psychosomatic Medicine, Sept. 1948. Vol. 10.
7. Behavior and Psychological Problems of Young Diabetic Patients. Alfred E. Fischer, M.D. and Henry Dolger, M.D. Archives of Internal Medicine, Dec. 1946. No. 6, Vol. 78.
8. The Doctor-Patient Relationship in the Management of Diabetic Patients and Their Emotional Problems. Lawrence E. Hinkle, M.D. New York State Journal of Medicine, Sept. 1953. Vol. 53, No. 17.
9. ECT as a Life-Saving Procedure in a Patient Suffering From Diabetes Mellitus, Uncontrollable, Due to a Paranoid Psychosis. A. Leonard Abrams, M.D. The American Journal of Psychiatry, Dec. 1956. Vol. 113, No. 6.
10. The Inheritance of Diabetes Mellitus. G. S. Balfour, M.D. The Canadian Medical Association Journal, June 1959. Vol. 80, No. 11.
11. Psychological Factors in the Etiology of Diabetes. William C. Menninger, M.D. Journal of Nervous and Mental Disease, Jan. 1935. Vol. 81, No. 1.
12. Unstable Diabetes. Panel Discussion. Alexander Marble, M.D. Journal of the American Diabetic Assoc., Dec. 1956. Vol. 5, No. 6.
13. The Personality and Intelligence of Diabetics. A. J. Kubany, M.S., and T. S. Danowski, M.D. The Journal of the American Diabetic Assoc., Nov. 1956. Vol. 5, No. 6.
14. The Diabetic Personality. Robert W. Palmer, M.D. The Journal of the Indiana State Medical Association, Oct. 1958. Vol. 51, No. 10.
15. Diabetes of Childhood. Marion R. Shafer, M.D. The Journal of the Michigan State Medical Society, Oct. 1956. Vol. 55, No. 10.
16. Brittle Diabetes. E. Paul Sheridan, M.D. The Journal of the Michigan State Medical Society, Oct. 1956. Vol. 55, No. 10.
17. Some Emotional Aspects of the Treatment of Diabetes Mellitus and the Role of the Physician. Samuel Stearns, M.D. The New England Journal of Medicine, Sept. 1953. Vol. 249, No. 12.
18. Psychosomatic Considerations of Diabetes in Childhood. Phillip H. Starr, M.D. The Journal of Nervous and Mental Disease, June 1955. Vol. 121, No. 6.
19. Experimental Study of Life Situations, Emotions, and the Occurrence of Acidosis in a Juvenile Diabetic. Lawrence E. Hinkle, M.D., and Stewart Wolf, M.D. The American Journal of Medical Sciences. Vol. 217. 1949.
20. Summer Camps for Diabetic Children. Alexander Marble, M.D. The Journal of the American Diabetic Association, May 1952. Vol. 1, No. 3.
21. Psychogenic Factors in the Etiology of Diabetes. R. R. Gendel, M.D. The New England Journal of Medicine, April 25. Vol. 234, No. 17.
22. Importance of Life Stress in Course and Management of Diabetes Mellitus. Lawrence E. Hinkle, M.D. and Stewart Wolf, M.D. The Journal of the American Medical Association, Febr. 1959. Vol. 148, No. 7.
23. The Inter-relationships of Mental Disorders and Diabetes Mellitus. William C. Menninger, M.D. Journal of Mental Science. Vol. 81, 1935.
24. Studies in Diabetes Mellitus. Lawrence E. Hinkle, M.D., and Steward Wolf, M.D. Psychosomatic Medicine. Vol. 13. 1951.
25. Behavior Problems in Juvenile Diabetics. P. Katz, M.D. The Canadian Medical Association Journal, May 1957. Vol. 76, No. 9.
26. Emotional Factors in the Patient With Diabetes Mellitus. I. Arthur Mirsky, M.D. Bulletin of the Menninger Clinic. Vol. 12. 1948.
27. Emotional Factors in the Precipitation of Recurrent Diabetic Acidosis. Harold Rosen, M.D., Ph.D., and Theodore Lidz, M.D. Psychosomatic Medicine. Vol. 11. 1948.
28. Emotional and Instinctual Factors in Diabetes Mellitus. George E. Daniels, M.D. The American Journal of Psychiatry. Vol. 93. 1937.
29. Juvenile Diabetes and Its Psychiatric Implications. Eugene I. Falstein, M.D., and Illse Judas, M.D. The American Journal of Orthopsychiatry. Vol. 25. 1955.
30. The Psychodynamics of Family Life. Ackerman. Basic Books.

CHANGES OF ADDRESS

Members of the Kansas Medical Society will receive the JOURNAL and correspondence from the Executive Office promptly only if correct addresses are on file. Report changes to Kansas Medical Society, 315 West Fourth Street, Topeka, Kansas.

Childhood Nephrosis

Five Years' Experience in Treatment

RALPH R. HALL, M.D., *and* ROBERT C. FAIRCHILD, M.D., *Kansas City*

THE EXPERIENCE PRESENTED IN this paper is based on the long-term treatment of patients with childhood nephrosis seen at the University of Kansas Medical Center and the Kansas City Children's Mercy Hospital Renal Disease Clinics* over the five year period from September 1954 to September 1959. The criteria for the diagnosis of nephrosis in these children were as follows: edema, albuminuria, hypo-albuminemia, and hypercholesterolemia. The diagnosis of childhood nephrosis was viewed with skepticism if there were any significant initial or persistent elevation of blood pressure or if there were hematuria of any amount.

During the five year period, 21 children with nephrosis have been observed for varying lengths of time as shown in *Figure 1*. Of these, four children

Months of Observation	*No. of Patients*
48 to 60	5
36 to 47	0
24 to 35	4
12 to 34	7
Less than 12	5

Figure 1

have expired and 17 have survived. Seven children are in remission and on no therapy whereas 10 continue to show either hypo-albuminemia, hypercholesterolemia, or albuminuria and are at present on therapy. The age at which these children first had clinical symptoms of nephrosis is shown in *Figure 2*. The majority of the patients at this clinic presented with edema during the first four years of life, the extremes being seven months to 14 years of age at onset. There is no apparent difference in the course, symptomatology or prognosis in the different age groups that can be seen to date.

Much Is Not Known

There is a multitude of unanswered questions concerning nephrosis. Foremost among these is a definite etiology. Lang, *et al*[1, 2] have left little doubt that the majority, if not all, of the cases of this disease seen in children are of the antigen-antibody type." The precipitating factor in the cases seen in the aforementioned clinics for the most part remains in doubt. One child developed symptoms a short time following an insect sting and relapsed later following a sting by a similar insect. There are two children, one of them deceased, but the other living and attending clinic at the present time, from the same family.

1. The results of the use of Triamcinolone in the treatment of nephrosis in children who were maintained on daily small doses for periods of at least one year compare favorably with the results from the use of other corticosteroids.

2. The initiation of therapy with Triamcinolone was accompanied by a substantial and prompt loss of weight in each instance in which it was substituted for Prednisone. This probably represents loss of water which was retained while on Prednisone.

3. No adverse side effects which necessitated the discontinuance of the drug were found in those children treated with Triamcinolone. In the dosage used for maintenance over long periods of time, Triamcinolone appears to be a relatively innocuous steroid in the treatment of nephrosis.

4. No conclusions may be drawn from our experiences with Diuril or paracentesis in the production of diuresis in children with nephrosis.

Prior to February 1958 the children with nephrosis had been treated with Cortisone or ACTH for which prednisone was later substituted when it became available. The appearance of cushinoid facies, hirsutism, and glycosuria with these steroids was almost universal. Intermittent steroid therapy was instituted in an effort to decrease these side-effects without much success. Therefore, when Triamcinilone* became available in February 1958 a new therapeutic regime was followed. The patient with edema was treated with four mg. of Triamcinilone four times a day until diuresis occurred. The dosage was then

Department of Pediatrics, University of Kansas Medical Center, Kansas City, Kansas and Children's Mercy Hospital, Kansas City, Missouri.

* Sponsored by the Greater Kansas City Chapter of the National Kidney Disease Foundation.

* Aristocort®, Lederle Laboratories.

decreased to two mg. four times a day and then adjusted to two mg. of Triamcinilone two to four times daily depending on the patient's clinical response and the size and age of the child. Therapy has been continued until the children have been free of proteinuria and edema for at least one year; or if the year is completed during the season when respiratory infections are prevalent, medications are continued until the risk of such infections is reduced. In addition, broad spectrum antibiotics have been given daily with Triamcinilone. The antibiotic dose is usually kept small and the mother is instructed to increase the dose to therapeutic levels when the first symptoms of any infectious process appear. The patients are also maintained on a restricted salt diet. Since this type of therapy was instituted, 15 children have been maintained on Triamcinolone.

Only three children of the eight treated with Triamcinolone who had become free of proteinuria for a period of six months or more have again developed proteinuria. The first one, a 17-year-old white female, developed proteinuria two and a half months following the cessation of steroid therapy, which had been maintained for a period of one year without any evidence of albumin in the urine. She has again been started on steroid therapy. The second, a 13-year-old boy, had the onset of proteinuria after approximately nine months of therapy with Triamcinolone at the dose of two mg. four times

AGE AT WHICH SYMPTOMS OF NEPHROSIS FIRST NOTED

	Number of Cases
Less than 1 year	1
1 to 2 years	2
3 to 4 years	2
4 to 5 years	6
5 to 6 years	1
6 to 7 years	1
7 to 8 years	1
8 to 9 years	2
9 to 10 years	1
10 to 11 years	0
11 to 12 years	1
12 to 13 years	0
13 to 14 years	0
14 to 15 years	1
Total	21

Figure 2

a day. The third, a six-year-old boy, developed recurrence of edema and albuminuria five months after cessation of therapy. One additional child has had urines positive for albumin and has had hypercholesterolemia and mild hypoproteinemia without edema, despite steroid therapy. At the writing of this paper, five other children have had their Triamcinolone discontinued after a year or more of therapy and ten

NUMBER OF DAYS OF STEROID* THERAPY REQUIRED TO INITIATE DIURESIS

Days of Therapy Required	*Number of Times Diuresis Started on This Day*
3rd day	1
5th day	1
6th day	1
7th day	0
8th day	2
9th day	5
10th day	10
11th day	6
12th day	1
13th day	2
14th day	0
15th day	0
16th day	0
17th day	0
18th day	1
Total	30

(Four children failed to respond to steroid therapy.)
* Represents both ACTH and Adrenal Steroids.

Figure 3

children are still being maintained on Triamcinolone. All of these ten children have been on therapy for at least nine months. There have been no serious complications from the use of steroid therapy in this group of children.

Hair Growth Side Effect

The only adverse effect has been the growth of a small amount of hair on the face and trunk. One small girl, who had persistent pyelitis and was on relatively large doses of Triamcinolone, four mg. four times a day, developed moon facies and some moderate increase in truncal obesity and abdominal striae. Following her diuresis and the clearing of the urinary tract infection, the dose of Triamcinolone was decreased to two mg. three times a day with subsequent disappearance of all cushinoid appearance with the exception of her increased amounts of hair. Four children have been seen in relapse and initially treated with Triamcinolone in dosages of four mg. four times a day. All of these children had satisfactory diuresis with this regimen. Statistics on diuresis and its relation to steroid therapy are presented in *Figure 3*. One additional child was given ACTH with her Triamcinolone and Diuril until she was free of proteinuria. There have been no instances of increased blood pressure while on therapy with Triamcinolone and there have been no problems with electrolyte balance. Gastrointestinal symptoms have been practically non-existent. One nine-year-old boy who had a previously perforated duodenal ulcer while on Cortisone, has been on Triamcinolone now for one year. He has been given anti-

acids after meals and between meal feedings. He has had no dyspepsia nor abdominal pain.

One interesting aspect of Triamcinolone therapy was the initial drop in weight occurring in the first two weeks of therapy. This was particularly noticeable in children that were receiving Prednisone and who were switched abruptly to Triamcinolone *(Figure 4)*. Some of the weight loss occurring later in therapy might possibly be due to the catabolic effects attributed to Triamcinolone. We have not observed muscular weakness as a side effect of this type of therapy. We have been on a constant alert for this as well as for evidence of protein wasting since DuBois and others[5, 6] have reported this complication of Triamcinolone therapy. Potassium Chloride supplement was given initially to all patients on steroids and has since been discontinued on most of these patients. It is to be noted that when Triamcinolone was discontinued in five children previously mentioned, it was done so by abruptly stopping the drug. Only one child had any difficulty following this procedure. Three days after its discontinuance he suffered headaches, nausea and vomiting for two days. Whether this was caused by the discontinuance of Triamcinolone or was simply coincidental, is a matter of speculation.

WEIGHT LOSS IN FOUR MALES FOLLOWING CHANGE FROM PREDNISONE TO TRIAMCINOLONE WHILE IN REMISSION

	Wt. Before	*Wt. After*	*Interval After Changing Drugs*
C.B.	39 lbs.	36 lbs.	2 weeks
J.C.	45½ lbs.	41 lbs.	2 weeks
L.C.	45 lbs.	41 lbs.	2 weeks
R.W.	111 lbs.	106 lbs.	4 weeks

Figure 4

Paracentesis Last Done

Since 1957 there has not been occasion to do paracentesis. Diuril® has been given to only one child during her initial attack. This was followed by diuresis, although albuminuria continued. It was possible to prevent this child from gaining excessive weight by giving Diuril three days per week until her albuminuria ceased. This child, whom we mentioned previously, was found to have a genitourinary tract infection, which cleared when treated with antibiotics. Following this therapy she has been free of proteinuria and has been maintained on small doses of Triamcinolone with only traces of albumin on rare occasions in her urine.

It has been felt by some that diuresis was occasionally initiated by paracentesis. Recent experimental evidence supports this hypothesis in ascites due to cirrhosis.[7] Since the beginning of this study, 26 paracenteses have been done. In ten of these instances the child continued to lose weight following this procedure or began to lose weight at the time of paracentesis. Three of these were noted to be losing fluids from the paracentesis site and Cortisone or ACTH was being administered at the time 23 paracenteses were done. Of the three paracenteses done at a time when steroids were not being administered, one child began to diurese at the time of the paracentesis and continued to do so for a number of days. It is, therefore, difficult to judge the significance of the paracenteses as a precipitating factor in the diuresis.

Since the inception of these Renal Clinics, four of the 21 patients seen with a diagnosis of Nephrotic Syndrome have expired. All of these died of renal failure and in no instance was infection a contributing cause. This is approximately 19 per cent of the total and compares favorably with other studies on nephrotic children, seen during the first six months of illness, on a larger series of patients.[8] It is significant that of the four children who expired, three never responded to therapy to the extent that they became free of albuminuria. Their course was one of persistent albuminuria and edema and they later developed azotemia and expired as the result of renal failure. The fourth child had had two complete remissions during which time her serum cholesterol and proteins were normal, and there was no loss of albumin in the urine. She subsequently became refractory to steroid therapy and died in renal failure. The pathologist's description of the kidney in each of the four cases as seen with a light microscope was consistent with subacute or chronic glomerulonephritis.

Department of Pediatrics
University of Kansas Medical Center
Kansas City, Kansas

References

1. Lang, K., Strang, R., Wink, R. J., and Slobody, L. B.: Treatment of the Nephrotic Syndrome With Steroids in Children and Adults. Arch. of Int. Med. 99:760, 1957.

2. Mellors, R. C., and Ortega, L. G.: Analytical Pathology, III. New observation on the pathogenesis of glomerulonephritis, lipid nephrosis, periarteritis nodosa, and secondary amyloidosis in man. Am. J. Path. 32:455-499, 1956.

3. Goodman, H., and Baxter, J. H.: Search for Anti-Kidney Antibodies in Patients. Recordings of the Ninth Annual Conference on the Nephrotic Syndrome. Pp. 61-63, 1957.

4. DuBois, E.: Triamcinolone in the Treatment of Systemic Lupus Erythematosus. J.A.M.A. 167 (13): 1590, 1958.

5. Dameshek, William, and Rubio, Fernando Jr.: Drug reactions. J.A.M.A. 167 (17), 1958.

6. Perkoff, Geralt T., Silber, Robert, Tyler, Frank H., Cartwright, G. E., and Wintrobe, M. M.: Studies in Disorders of Muscles. Am. J. Med. 26:6, p. 891, 1959.

7. Gordon, Martin E.: The Acute Effects of Abdominal Paracentesis in Laennec's Cirrhosis Upon Exchanges of Electrolytes and Water, Renal Function and Hemodynamics. Am. J. Gast. 33:15-36, 1959.

8. Riley, Conrad: Statistical Evaluation of Survival of Nephrotic Children Treated With Steroids. Proceedings of the 10th Annual Conference on the Nephrotic Syndrome. Pp. 273-276, 1959.

Tumor CONFERENCE

Adenoma of the Pituitary Gland With Acromegaly

Edited by C. C. JONES, M.D.

Dr. Boley (Moderator): This patient had an uncommon tumor but one that produced certain very characteristic changes in the patient. Detection of these changes should allow the astute clinician to make an accurate histologic diagnosis. It is particularly important to consider this tumor at this time in the light of newer diagnostic methods and therapy.

Mr. Scott (Medical Student): The patient is a 19-year-old white girl who was admitted for the first time to the University of Kansas Medical Center on September 24, 1959, with a chief complaint of failing vision. In July of 1958 she visited an optometrist in her home town because of intermittent episodes of double vision. He told her that she was blind in both her right visual fields. She did not see a physician at this time, and her vision did not improve. A year and a half before the present admission her menstruation became scanty and irregular, and a year before admission it ceased altogether. No other changes were noted until about one month before the present admission when she visited an osteopathic physician because of a "cold." This doctor noted that her hands and feet seemed larger than they should be, and upon examination of her visual fields he found that she had a bitemporal hemianopsia. Radiograms of the skull revealed an enlarged sella turcica, and the girl was referred to the University of Kansas Medical Center.

Positive physical findings on admission were few. She had a mild prognathism and noticeably enlarged hands and feet. Her temporal visual fields were reduced by the confrontation test, and this finding was verified later on more careful examinations of her visual fields *(Figure 1)*. There were no reflex changes. There were no secondary sexual changes. There was no loss of axillary or pubic hair; the blood pressure was normal; and she did not have signs or symptoms of hypoglycemia.

Dr. Williamson: A year ago this patient had to cut her rings off because her fingers had become too large, and she had to buy shoes two sizes larger. The changes in her hands and feet are early, but I think they are quite definite and significant particularly since there is a history of progression. The patient had bitemporal hemianopsia which was absolute in the right eye and partial in the left eye. She had some optic atrophy in the right eye as evidenced by paleness of her right disc. She had a peculiar muscle imbalance in her eyes that can be demonstrated, and the double vision that she complained of was on the basis of this muscle imbalance.

Medical Student: Does she have headaches?

Dr. Williamson: She does not have headaches. She did have two strange episodes in which she apparently became confused and dazed, carrying out automatic acts and then not recalling them. This behavior suggested psychomotor seizures, and the electro-encephalogram verified abdominal spike activity from the temporal lobe. She was placed on dilantin before surgery. There was no evidence of diabetes insipidus.

Mr. Scott: Ophthalmic, gynecologic, and endocrinologic consultations were arranged and many laboratory tests were performed on this patient. In general, most of the special laboratory tests seemed to indicate hypopituitarism. The values of the radioactive iodine uptake and the protein-bound iodine determination were below the limits of normal and suggested hypothyroidism. The urine follicle-stimulating hormone (FSH) value was 6.6 mouse units which is below normal. The urea clearance test was increased, and according to Dr. Bolinger this finding is supposed to be a sign of increased growth hormone. The upper limit of normal is 125 per cent of the average and this patient had 141 per cent. A glucose tolerance test was normal.

Cancer teaching activities at the University of Kansas Medical Center are aided by grants from the National Cancer Institute, U. S. Public Health Service, and from the Kansas Division of the American Cancer Society. Dr. Jones is a trainee of the National Cancer Institute.

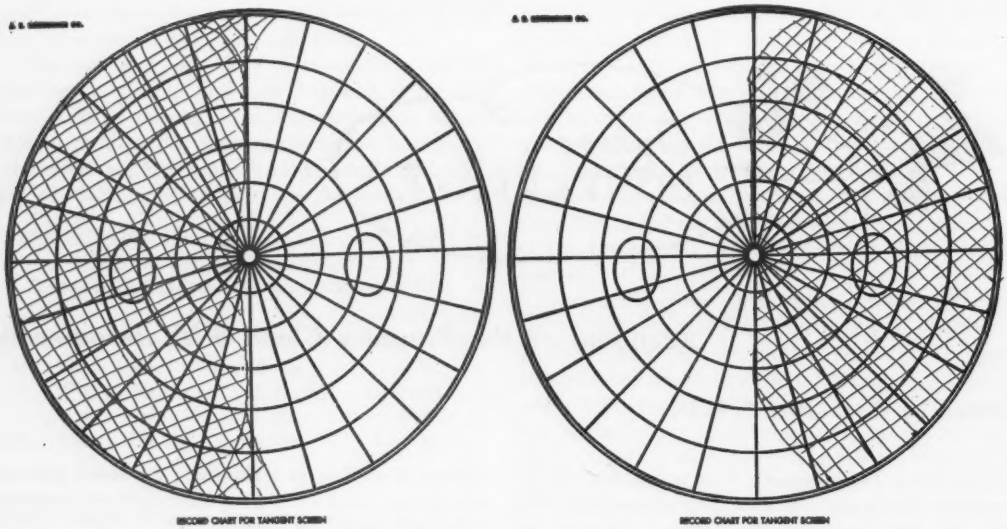


Figure 1. Record of visual field changes on admission showing almost complete bitemporal hemianopsia. *A* is the right visual field and *B* is the left.

Dr. Boley: May we see the x-rays?

Dr. Gantioqui (Radiologist): The interesting radiologic changes are mainly confined to the skull *(Figure 2)*. The sella is enlarged and is increased in both width and depth. There is thinning of the dorsum sellae. The anterior and posterior clinoid processes show slight elongation and thinning, but they are not completely eroded away. The convolutional patterns of the brain are quite prominent but are not outside the limits of normal. No unusual calcifications are demonstrated.

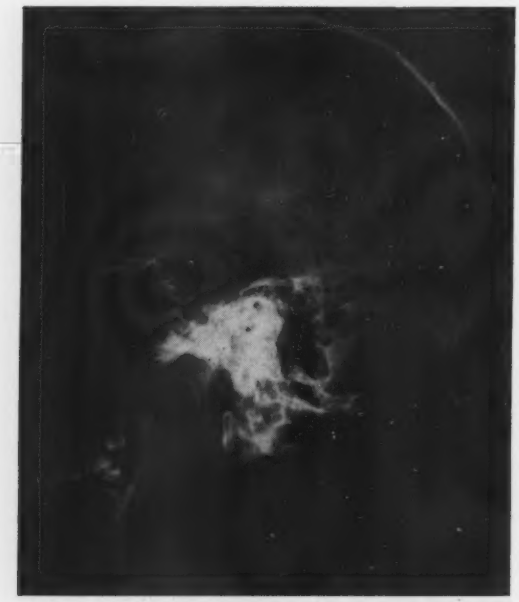


Figure 2. Roentgenogram of the skull showing enlargement of the sella turcica. There is erosion of the anterior and posterior clinoid processes.

A right carotid arteriogram shows good filling of the anterior and middle cerebral arteries on the right side of the brain. The carotid siphon is somewhat straightened, and there is slight elevation of the right anterior communicating artery *(Figure 3)*. These findings are indicative of an intrasellar tumor.

Dr. Boley: Are there any bony changes in the face or the hands and feet of this patient?

Dr. Tice: Changes in the facial bones and the mandible are not detected on the x-rays in the present case. However, radiographic enlargement of the jaw, frontal bones and frontal sinuses are frequently seen in the acromegalic patient.

Dr. Williamson: This girl had the early classical signs and symptoms of acromegaly diagnosable by inspection and history. There was an expanding intrasellar lesion that was causing bitemporal hemianopsia and optic atrophy. These findings indicate that she undoubtedly had a functioning tumor of her pituitary gland which was causing the acromegaly, and by all rights this tumor should be an eosinophilic adenoma. We had the patient admitted to the hospital in order to prove this clinical impression. Endocrine studies confirmed hypopituitarism with the one exception of an increased urea clearance test which is supposed to be a sign of increased growth hormone. Acromegalics and pregnant women, according to Dr. Krantz, are the only two conditions which have in-

creased urea clearance, and both have increased production of growth hormone from the pituitary gland. This patient's radiograms confirmed an intrasellar tumor *(Figures 2, 3)*. The arteriogram *(Figure 3)* confirmed the fact that the tumor had burst out of the sella, and visual field tests *(Figure 1)* indicated that it was compressing the optic chiasm. Taken together, these findings are pathognomonic of an eosinophilic adenoma compressing the chiasm.

The only question we had for discussion following

Figure 3. Right carotid arteriogram (frontal view) showing elevation of the right anterior communicating artery by the intrasellar tumor.

her work-up was whether she should receive surgery or irradiation therapy. These tumors are benign, and they do respond to irradiation. Usually if we see a patient early before any loss of vision has occurred, we elect to give x-ray therapy and to follow their visual fields. There are many patients who with x-ray therapy alone remain well a large number of years—even perhaps a lifetime—and never need surgery. If, however, there is compression of the optic chiasm, we feel that immediate relief of pressure from their optic nerves is necessary, and this can be done only with surgery. Radiation is contraindicated in the latter situation because the initial reaction of the tumor to radiation is swelling, and this may cause further compression of the optic nerves and produce blindness. We have had several patients who in three days of x-ray therapy lost their vision due to edema in the tumor causing pressure on the optic nerves. These were then operated upon.

Having made the decision to operate, the next vital question was: should the patient have partial removal of the tumor to preserve vision and allow the tumor to continue to give her some necessary pituitary function while possibly allowing her acromegaly to progress, or should she have a total hypophysectomy? Several years ago we would never have considered total hypophysectomy, but now several investigators[1, 2] claim that all acromegalics should have total hypophysectomies. It is stated that with this treatment the acromegaly is reversible. This was new to me, but I believe that it is true. Discussing this case with Dr. Bolinger and some of the other medical men, we decided that she should have a total hypophysectomy in order to cure her acromegaly while correcting her visual difficulties. We now can maintain a hypophysectomized patient for a normal life expectancy relatively easily with cortisone and thyroid extract.

At operation the surgical incision was placed entirely above the hairline. The large frontal sinuses had to be transected in the craniotomy for exposure.

We saw that the right optic nerve was elevated by the dome of the tumor so that it arched upwards at a right angle from underneath the anterior clinoid process and made another 90° angle over the dome of the tumor. Instead of being normally round, the nerve was flattened like a ribbon indicating serious compression. I think that if we had irradiated the tumor with this finding she would have lost her vision in the first day or two and may not have regained it, so our decision to operate on her was a good one, I think. The tumor freed up nicely from the optic nerves and from the optic chiasm. Down in the sella turcica the tumor was soft and mushy, and it was easily removed by suction. We removed the tumor completely from along the lateral side of the sella and almost completely from beneath the chiasm. Then, in the depths of the sella we saw a small white object attached to a stalk that almost certainly was part of the normal pituitary gland. It was in the shape of a pancake partially hidden by the optic chiasm. Ordinarily in these operations the surgeon cannot distinguish tumor from the normal pituitary gland, but in this particular instance we thought that this was most certainly a part of the pituitary gland, so we terminated the procedure and contented ourselves with a partial removal. It is quite possible that she had a tumor of the anterior lobe that had broken away from and compressed the remainder of the pituitary gland. With removal of the tumor while leaving some normal pituitary and an intact pituitary stalk, I hope that she might regain some pituitary function. We removed approximately 95 per cent of the tumor. She still has tags of tumor up

under the optic chiasm and under the carotid arteries. I think she still has the posterior lobe of the pituitary gland, the stalk and part of the anterior lobe with it, all of which were flattened and compressed by the tumor. Had we continued with our plan to do a total hypophysectomy, we would have curetted all tissue from the sella and then cauterized it with Zenker's solution.

Dr. Boley: Dr. Helwig, would you show us the tumor?

Dr. Helwig (Pathologist): I will do the best I can. I am reluctant to see this patient and then show the histology of this tumor, because they do not entirely jibe. In cases such as this, however, I always tend to believe the patient.

Dr. Williamson: I might say in your defense, Dr. Helwig, that this tumor was cystic and a lot of it went down the sucker; some went to Dr. Boley's lab; some went to Dr. Steegmann's lab, but a lot of it went down the sucker. The pathologists have actually only a part of this tumor.

Dr. Helwig: Thank you for this information, Dr. Williamson. A high power view of the tumor shows that it is composed of uniform sheets of tightly packed cells *(Figure 4)* which, for the most part, look like the ordinary chromophobe cell that may be seen on the ordinary hematoxylin and eosin stain. However, I think it must be remembered that the granules which are present in the acidophil or chromophil cells may be present in the form of a most minute dust, and under oil emersion I could see some tiny dusty granules in certain of these cells. Now, as you know, Pearse[3] describes a method using the periodic acid Schiff (PAS) stain technic with the counterstain of orange G to demonstrate acidophilic granules. The normal chromophobe adenoma is negative both for the PAS stain and for the orange G stain. Orange G will bring out the acidophilic granules or will stain the acidophil cells orange. The PAS technic stains basophils. I found some positive orange G staining cells in the Bouin's-fixed material, although all fields are certainly not convincing. It is quite difficult to make out the granules in most places. Occasional alpha cells are present that do have fine granules, and I think that there are definite acidophilic cells here. They certainly are not, by any matter of means, predominant. Moreover, there are beta cells as well that show little droplets of polysaccharide stained by the PAS technic. The predominant cell throughout, however, is the chromophobe.

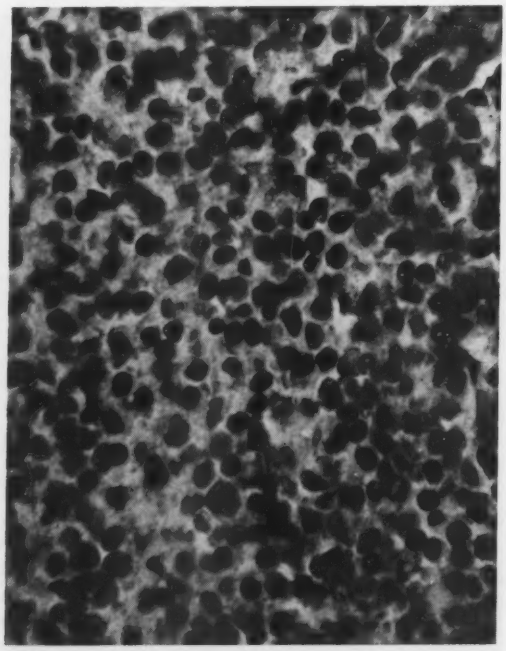


Figure 4. High power magnification of a representative area of the pituitary tumor. The cells are predominantly chromophobes. ×540.

I have had very little experience with pituitary adenomas. They are not a common tumor in the type of hospital where I work, although they constitute about 20 per cent of all intracranial neoplasms. At least half of all the pituitary tumors are chromophobe adenomas. About 35 per cent are the acidophil or eosinophil type, and the remaining 15 per cent constitute the basophil tumors. It is disturbing in the face of the clinical manifestations that this patient had that there are so few acidophilic granules in so few of these cells. In the normal pituitary it is quite true that from area to area and field to field the percentage of chromophobe and chromophil cells varies. According to Bailey[4] the higher the percentage of acidophilic cells, the more striking the signs and clinical findings of acromegaly. There is no denying that the patient presented today has acromegaly, but the histological appearance of the tumor *(Figure 4)* is certainly not the one that we frequently think is associated with acromegaly.

Dr. Boley: How is this patient to be followed after operation?

Dr. Williamson: After surgery she had diabetes insipidus for two days, but this cleared, and now she is not drinking much water. She is still taking dilantin.

Now we wonder if we should irradiate the remaining bits of tumor. Before we consider this, though, I want to find out if the pituitary gland will recover from the surgical insult and from the compression by the tumor. After her six weeks' checkup we will consult Dr. Tice. It is my personal feeling

that she should receive some irradiation to keep the remaining bits of tumor from recurring. We know that the pituitary gland tolerates irradiation therapy well. With radical surgery followed by irradiation in this case we may have a pituitary that begins to function again. Many is the chromophobe and eosinophil adenoma of the pituitary gland that will be asymptomatic for as long as 20, 30 or 40 years after surgery plus irradiation therapy. This patient should have an excellent life expectancy, and her vision should return to a reasonably normal state. Immediately after operation of course there was some constriction of her visual fields, but she is gaining some of her temporal vision back now. Her visual acuity now is 20/20 in both eyes—the same as it was before operation. The amount of hormonal therapy that she will require will have to be determined later. At the present time she is receiving no endocrine medications in order to allow her pituitary to begin functioning if it will.

Dr. Boley: Will her menstrual periods return?

Dr. Williamson: If the pituitary starts functioning she may begin menstruating in six to eight weeks. However, the nubbin that we left may represent only her posterior lobe, in which case there will be no pituitary function and she will not menstruate. I have never been fortunate enough to be able to separate a pituitary gland from tumor like this before, and I have high hopes that in this case she may regain normal pituitary function.

Dr. Boley: Dr. Tice, do you have any comments?

Dr. Tice: As Dr. Williamson said, pituitary tumors are radiosensitive. This includes both the eosinophil adenoma and the chromophobe adenoma. Most of the tumors encountered are of the chromophobe type. Surgical exploration is usually performed initially because one can make a mistake in the diagnosis of a "scooped out sella." They are not all due to adenomas, and, of course, it is valueless to irradiate something that is not going to respond to irradiation. I have treated a few patients with acromegaly. The acromegaly has not reversed over the years with irradiation therapy. The patient gets along well, although he retains the features of acromegaly. I agree with the plan that Dr. Williamson presented. If the tumor has not all been removed, the patient should have irradiation later on.

Dr. Helwig: What type of irradiation would she receive?

Dr. Tice: I use radioactive cobalt. Up until 1958 we used x-rays.

Medical Student: Dr. Williamson, you said that acromegaly is reversible. Does this include the bone changes in the hands, feet, jaw and the brows?

Dr. Williamson: Bronson Ray, who is now doing total hypophysectomies for advanced acromegaly, claims that the feet and hands are shrinking and the jaw is receding in his successful cases. Dr. Ray is the world's authority on the hypophysectomy, and he is using this procedure on all his cases of acromegaly.

Dr. Boley: The histology of this tumor which bothered Dr. Helwig also bothered the pathologists at the Kansas Medical Center. We were happy to find a few cells with the orange color, but I could not by any stretch of the imagination make myself say that this was an eosinophil adenoma even though clinically it should be. Possibly that portion went down the drain, since the tissue that Dr. Steegmann received was also that of a chromophobe ademoma. I might say that we sent sections of this tumor to Dr. Sheehan in Liverpool, England, and he also submitted a diagnosis of chromophobe adenoma.

In a recent series of 105 cases of verified pituitary adenoma[1] there were at least three cases of acromegaly in which no acidophils could be found despite good biopsy specimens, the diagnosis of solid chromophobe adenoma being the only one possible. Dr. Dorothy Russell[5] states that in practice, acromegaly is not invariably associated with unequivocable acidophil adenoma of the pituitary. On the contrary, the cells of the adenomas may bear a greater resemblance to the chromophobe type. This is not necessarily attributable to exhaustion supervening upon a previous acidophilic stage. The answer to the problem awaits solution, and this case seems to be an example of what she is talking about.

In summary, this is a classic case of acromegaly in a young girl who had a good response to hypophysectomy. The pituitary tumor was removed while leaving the compressed, non-neoplastic portion of the pituitary gland intact. The histologic finding of a chromophobe adenoma of the pituitary in this case was unusual and certainly unexpected in view of the definite clinical findings of acromegaly. It is expected in this case that the acromegalic features, the visual changes and the endocrine changes will regress in part, or else be easily controlled by her therapeutic regimen.

References

1. Heimbach, S. B.: Follow-up studies on 105 cases of verified chromophobe and acidophile pituitary adenoma after treatment by transfrontal operation and x-ray irradiation, Acta neurochir. 7:101-151, 1959.

2. Bronson, R.: Unpublished data.

3. Pearse, A. G. E.: *Histochemistry, Theoretical and Applied,* 2nd Edition, Boston: Little, Brown and Co., 1960.

4. Bailey, P.: Tumours of the hypophysis cerebri. In Penfield, W. (Ed.), *Cytology and Cellular Pathology of the Nervous System,* Vol. 3, Chap. 26, New York: Paul B. Hoeber, Inc., 1932.

5. Russell, D. S.: The pituitary gland (hypophysis). In Anderson, W. A. D. (Ed.), *Pathology,* 3rd Edition, Chap. 34, St. Louis: The C. V. Mosby Co., 1957.

The Abnormal Hemoglobins and Associated Diseases

L. H. BATES, M.D., *Akron*

LITTLE INFORMATION WAS KNOWN concerning the abnormal hemoglobins until the year 1949. In that year, Pauling and his workers reported that the hemoglobin from a patient with sickle cell anemia migrated at a different rate than normal hemoglobin in an electrophoretic field. This hemoglobin was designated as S hemoglobin and normal hemoglobin as A. Other hemoglobins have been designated as C, D, E, F, G, H, I, J, K, L, M, N, O, and P. B was not included in the nomenclature because it was used by some investigators to refer to the hemoglobin of sickle cell anemia.

There are two hemoglobins which are considered normal in the human, A which is the adult type and F which is the fetal type and is normal in the newborn and for about 12 weeks of life. Beyond this age, F hemoglobin in amounts greater than three per cent are considered abnormal and probably indicate some anemic process which is putting a heavy demand on the hemopoetic system.

Genes Determined

The type of hemoglobin which an individual manufactures and which circulates in his blood vessels is genetically determined. The genes which determine the type of hemoglobin an individual will possess are with one exception inherited as dominant genes. This means that whenever a gene is present for any type of hemoglobin, that type of hemoglobin will be found in the individual. For example, a person who has an AS genotype will produce both A and S hemoglobins. Hemoglobin genes for types A, S, C, D, and E are fairly well established as being allelomorphic, that is on the same location on the chromosome so that no more than two of these hemoglobins can be made by one person. The ability to produce hemoglobin F seems to be present in all individuals regardless of the adult type of hemoglobin which they will produce. The production of F hemoglobin is suppressed by either the presence of hemoglobin A or by the gene for hemoglobin A. The evidence seems to indicate that it is the actual presence of the A hemoglobin itself which suppresses the hemoglobin F production. In thalassemia, a disease in which the gene is present for A hemoglobin but its formation is depressed by the thalassemia gene, hemoglobin F is present in relatively large amounts. Other adult hemoglobin types also suppress the formation of F hemoglobin but not to the extent that hemoglobin A does.

Halbrecht and Klibanski in 1957 reported a new type of fetal hemoglobin which they thought was normal but of an earlier period of development. It was found in a fetus of 20 weeks of age. Kunzer later did some work on this hemoglobin which he consistently found in the fetuses from seven to 14 weeks of age. He postulated that the three types of normal hemoglobin, the primitive (P), the fetal (F), and the adult (A) represent the three phases of hemato-

This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be best by the faculty at the school. Dr. Bates is now at the Akron General Hospital in Akron, Ohio.

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE

POSTGRADUATE MEDICAL STUDY—1960-61 CALENDAR

FOR MEDICAL PROFESSION

Symposia

1960

Aug. 29-31	FACULTY CONFERENCE ON MEDICAL EDUCATION
Sept. 16 & 17	TWELFTH WESTERN INSTITUTE ON EPILEPSY
Sept. 23	INFECTIOUS DISEASES
Oct. 6	SCHOOL HEALTH
Nov. 7-9	OBSTETRICS
Nov. 14-17	INTERNAL MEDICINE
Dec. 1 & 2	A. MORRIS GINSBERG MEMORIAL SEMINAR, Menorah Medical Center, Kansas City, Missouri
Dec. 9 & 10	CATARACT SURGERY
Dec. 15 & 16	VOCATIONAL REHABILITATION INSTITUTE

1961

Feb. 13 & 14	HYPERTENSION
Feb. 20-22	RADIOLOGY
Mar. 6-8	PEDIATRICS
Mar. 13	WHAT'S NEW IN ORTHOPEDICS
	MEDICAL-SURGICAL CLINICAL SYMPOSIA:
Mar. 20	Pulmonary Disease
Mar. 21	Gastroenterology
Mar. 22	Endocrinology
Mar. 23	Dermatology
Mar. 24	Psychiatry
Apr. 10-12	OTOLARYNGOLOGY
Apr. 12-14	OPHTHALMOLOGY
Apr. 17-19	ANESTHESIOLOGY
Apr. 20 & 21	CARDIAC AUSCULTATION
May 15-18	SURGERY

Intermittent Courses

Sept. 20-May 16	GENERAL MEDICINE & SURGERY, St. Joseph, Mo. (nine evening sessions, third Tuesday of each month)
Nov. 15-Apr. 18	GENERAL MEDICINE & SURGERY, Chanute, Kas. (six evening sessions, third Tuesday of each month)
Nov. 10-Apr. 20	MEDICINE AND THE FAMILY PHYSICIAN (six afternoon sessions, third Thursday of each month, except November session)
Dec. 6-Apr. 28	KANSAS CIRCUIT COURSE (six afternoon and evening sessions, one day each month at eight centers in Kansas)

Correspondence Courses

July 20-Mar. 22 and Jan. 20-Sept. 22	INTERPRETATION OF ELECTROCARDIOGRAMS (thirty-six weekly lessons)
Sept. 6-May 2 and Feb. 2-Oct. 5	HEMATOLOGY—I (nine monthly lessions)
Aug. 30-Apr. 25 and Jan. 26-Sept. 28	HEMATOLOGY—I (nine monthly lessons)

Special Skills Courses

Oct. 9-Dec. 11	RADIOLOGICAL PHYSICS (ten two-hour sessions weekly on Sunday)
June 5-17	HISTOCHEMISTRY
Offered by arrangement	CLINICAL USE OF RADIOACTIVE ISOTOPES

ALLIED HEALTH COURSES

Oct. 28-30	INSTITUTE FOR X-RAY TECHNOLOGISTS
Nov. 28-30	MATERNITY NURSING
Dec. 2 & 3	X-RAY TECHNOLOGY
Dec. 8 & 9	CARE OF PATIENTS IN NURSING HOMES
Jan. 12 & 13	CARDIOVASCULAR NURSING
Jan. 16-20	NURSING SERVICE ADMINISTRATION
Jan. 23-25	MEDICAL TECHNOLOGY
Feb. 16 & 17	LEGAL ASPECTS OF NURSING
Feb. 24 & 25	HEARING AND SPEECH
Mar. 13-17	HEAD NURSING
June 1 & 2	PRACTICAL NURSING
Offered by arrangement	EXFOLIATIVE CYTOLOGY

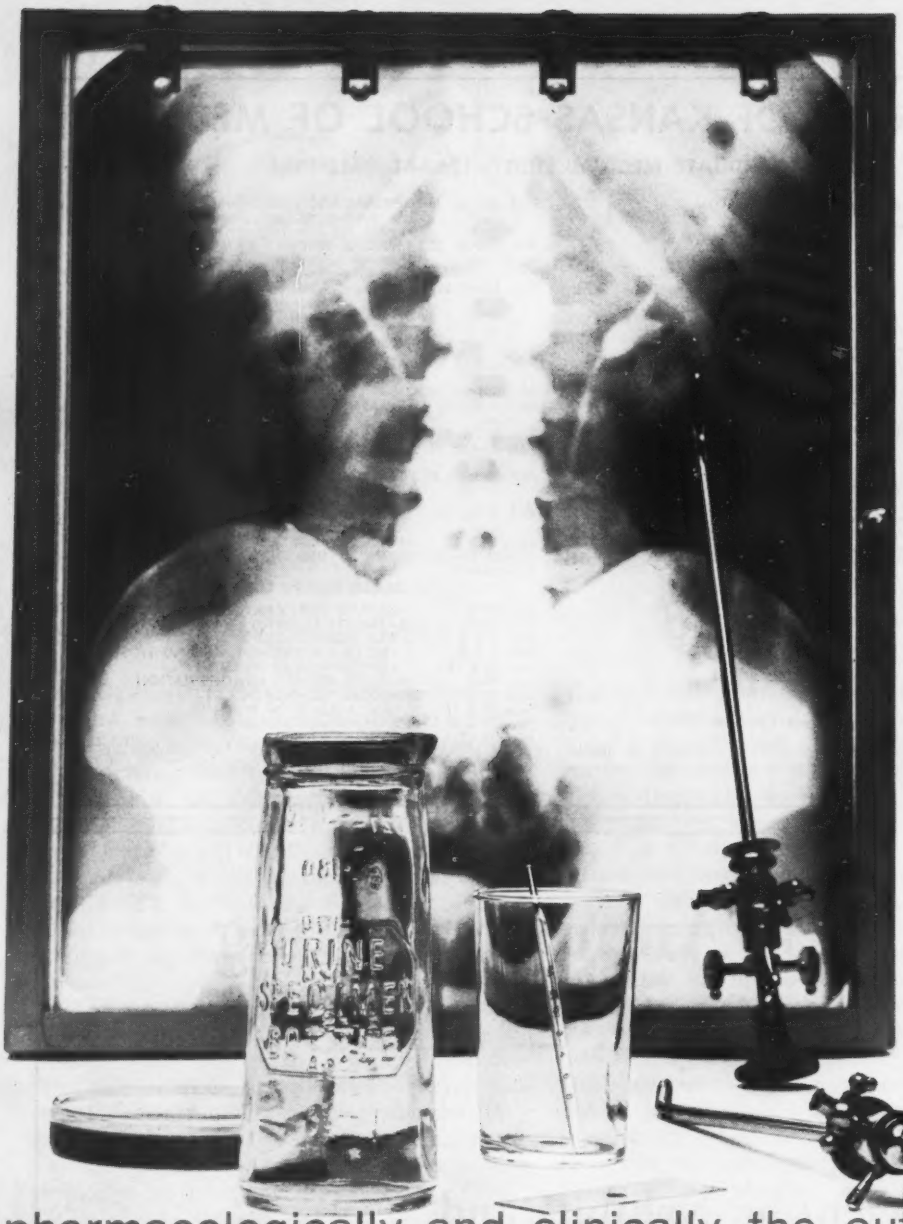
1961 Annual Meeting
May 1, 2, and 3

Featuring

Scientific Exhibits and
Commercial Exhibits

WICHITA—BROADVIEW HOTEL

Make Your Reservations Well in Advance



when sulfa is your plan of therapy..

pharmacologically and clinically the outstanding

Rapid peak attainment — for early control — KYNEX® Sulfamethoxypyridazine reaches peak plasma levels in 1 to 2 hours[1,2] . . . or approximately one-half the time of other once-a-day sulfas.[2] Uninterrupted control is then sustained over 24 hours with the single daily dose . . . through slow excretion without renal alteration.

High free levels — for dependable control — More efficient absorption delivers a higher percentage of sulfamethoxypyridazine — averaging 20 per cent greater at respective peaks than glucuronide-conversion sulfas.[2] Of the total circulating levels, 95 per cent remains in the fully active, unconjugated form even after 24 hours.[3]

Extremely low toxicity[4] . . . only 2.7 per cent incidence in recommended dosage — Typical of KYNEX relative safety, toxicity studies[5] in 223 patients showed TOTAL side effects (both subjective and objective) in only six cases, all temporary and rapidly reversed. Another evaluation[4] in 110 patients confirmed the near-absence of reactions when given at the recommended dosage. High solubility of both free and conjugated product[6] obviates renal complications. No crystalluria has been reported.

Successful against these organisms: streptococci, staphylococci, E. coli, A. aerogenes, paracolon bacillus, Gram-negative rods, pneumococci, diphtheroids, Gram-positive cocci and others.

1. Boger, W. P.; Strickland, C. S., and Gylfe, J. M.: Antibiotic Med. & Clin. Ther. 3:378, (Nov.) 1956. 2. Boger, W. P.: Antibiotics Annual 1958-1959, New York, Medical Encyclopedia, Inc., 1959, p. 48. 3. Sheth, U. K.; Kulkarni, B. S., and Kamath, P. G.: Antibiotic Med. & Clin. Ther. 5:604 (Oct.) 1958. 4. Vinnicombe, J.: Ibid. 5:474 (July) 1958. 5. Anderson, P. C., and Wissinger, H. A.: U. S. Armed Forces M. J. 10:1051 (Sept.) 1959. 6. Roepke, R. R.; Maren, T. H., and Mayer, E.: Ann. New York Acad. Sc. 60:457 (Oct.) 1957.

once-a-day sulfa...

NOTE: Investigators note a tendency of some patients to misinterpret dosage instructions and take KYNEX on the familiar q.i.d. schedule. Since one KYNEX tablet is equivalent to eight to twelve tablets of other sulfas, even moderate overdosage may produce side effects. Thus, the single dose schedule must be stressed to the patient.

KYNEX Tablets, 0.5 Gm., bottles of 24 and 100. Dosage: Adults, 0.5 Gm. (1 tablet) daily, following an initial first day dose of 1 Gm. (2 tablets).

KYNEX Acetyl Pediatric Suspension, cherry-flavored, 250 mg. sulfamethoxypyridazine activity per teaspoonful (5 cc.). Bottles of 4 and 16 fl. oz. Recommended Dosage: Children under 80 lbs.: 1 teaspoonful (250 mg.) for each 20 lb. body weight, the first day, and ½ teaspoonful per 20 lb. per day thereafter. For children 80 lbs. and over: 4 teaspoonfuls (1.0 Gm.) initially and 2 teaspoonfuls daily thereafter. Give immediately after a meal.

KYNEX®

Sulfamethoxypyridazine Lederle

NEW—for acute G.U. infection AZO-KYNEX® Phenylazodiaminopyridine HCl—Sulfamethoxypyridazine Tablets, contains 125 mg. KYNEX in the shell with 150 mg. phenylazodiaminopyridine HCl in the core. Dosage: 2 tablets q.i.d. the first day; 1 tablet q.i.d. thereafter.

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

IN ALCOHOLISM

A "SECOND BEST" ARMY FAILS TOTALLY

And against the main army of alcoholics—those whose drinking is a symptom of underlying pathology—less than a complete campaign is futile.

To shorten time, frustration and expense (simple efficient management) requires initial institutional care of these individuals:

1. To stop their ingestion of alcohol;
2. To detoxify the system;
3. To restore the fluid electrolyte balance;
4. To detect and correct nutritional anomalies peculiar to the individual alcoholic;
5. To overcome or reduce bodily ailments that contribute to the abnormal state and, finally
6. **To develop a program that will aid the particular individual in abstaining from all alcoholic beverages until death.**

THE RALPH CLINIC

529 HIGHLAND AVENUE • KANSAS CITY 6, MISSOURI

Telephone VI. 2-3622

The Ralph Clinic (in its 64th year) is in the advance of every phase of the treatment of alcoholism. It invites consultation with you concerning your patients with problems of excessive drinking.

(A portfolio about the Problem of Alcoholism is available upon request).

poietic activity, the mesoblastic, the hepatic and the medullary. Furthur evidence in this direction has been reported by two authors who studied the distribution of F hemoglobin among cells. Bromberg found different amounts of F hemoglobin in the top and bottom layers of centrifuged samples of blood from 29 newborns. The difference between the upper and lower layers increases inversely with the lowering of the total F percentage. The percentage of F hemoglobin at the bottom of the centrifuged sample was found to be greater than that at the top, indicating that the cells containing F hemoglobin were generally heavier than those not containing F hemoglobin. Allison agitated red blood cells with glass beads to mechanically rupture them, filtered the remaining cells and lysed them with hypotonic saline. He then determined the amount of F hemoglobin in each of the two fractions. The cells which were osmotically lysed were found to contain a higher percentage of F hemoglobin, again indicating that the F hemoglobin is distributed only in some of the cells and not in others. All of the other hemoglobins are thought to be equally distributed in all red cells.

Hemoglobin F

Hemoglobin F is reported to occur in varying amounts in many abnormal conditions of the blood including Sickle Cell Hemoglobin C disease, Hemoglobin H disease, thalassemia, Hemoglobin D thalassemia, Hemoglobin E thalassemia, and others. Huisman made and reported a study on normal levels of F hemoglobin at different ages in children. He found that in the newborn, about 80 per cent of the hemoglobin is F type and 20 per cent is type A. By the age of four months, F dropped to a level of .3 per cent to .4 per cent or lower.

Smith suspecting that hemoglobin F might remain elevated in the presence of nonspecific diseases ran and reported the F hemoglobin values on 18 individuals suffering from such diseases as malnutrition, prematurity, upper respiratory infection, chronic diarrhea, and viral hepatitis. The ages varied from four to 28 weeks and all of the values found were considered to be within normal limits for their ages, indicating that non-specific disease has very little if any influence on the fetal hemoglobin level.

All of the other hemoglobins are considered abnormal when found in any proportion. The most common abnormal hemoglobin is S which has an incidence of from ten to 39 per cent in some parts of Africa to none in other parts of Africa. The gene for the abnormal hemoglobin S is associated with varying symptoms depending on the gene with which it is coupled. When one S gene and a normal gene are present together, the condition is called Sickle cell trait and is characterized by no symptoms under normal conditions. When an individual with this genetic make up is exposed to decreased oxygen tension, such as when flying or traveling at high altitudes, their red blood cells are liable to "sickle." This means that the hemoglobin in the cells crystallizes, causing the cell to form into a sickle shape. The cells cling together within the vessels to cause embolization and infarction of organs, especially the spleen which gives the symptom of sudden onset of abdominal pain. When the S gene is present in the homozygous condition, that is combined with another S gene, the disease is called Sickle Cell Anemia and is characterized by numerous sickling crises which also cause sudden onset of abdominal pain due to splenic infarction. During these attacks the hemoglobin in the peripheral blood may drop as low as three or four grams per 100 cc and a smear of the blood at this time will show a high percentage of sickled cells. These crises are brought on by such minor conditions as fatigue, coryza or upper respiratory infections and often no causative factor can be found to be responsible for the crisis.

During and after the crises, infarction of the bone marrow may occur due to clogging of the nutrient blood vessels. Embolization of the fat and marrow follows infarction and results in fat globules being found in the saliva and urine as reported by Shelley in individuals with sickle cell anemia and sickle cell hemoglobin C disease. In the three cases presented by Shelley the most common symptoms of bone marrow infarction are bone pain, lethargy and fever.

Osteomyelitis Effects

Silver reported two cases of Salmonella osteomyelitis in individuals with abnormal hemoglobins, one with sickle cell thalassemia with 50 per cent sickle cells and one CD disease with 10 per cent target cells. He reviewed the literature and found 24 cases of Salmonella osteomyelitis reported in negro children and young adults who had sickle cell diseases. He suggests the reason for the commonness of the condition is that since the area is infarcted, the blood supply is reduced and neither the phagocytes or administered antibiotic drugs are able to come into contact with the bacteria which thrive on the infarcted bone marrow.

The S hemoglobin, with rare exceptions which are not well established, is confined to the negroid race or individuals of negroid ancestory. The S gene may be combined with any of the other genes which are allelic with it so that the conditions of Sickle cell Hemoglobin C disease (SC) reported by Newhall and Raymond, Sickle cell Hemoglobin D disease (SD) reported by Cheroff and Sickle cell Hemoglobin E disease (SE) reported by Aksoy and Leh-

mann can and do exist. The S gene may also be in combination with any of its alleles in the presence of the gene for thalassemia which would result in such conditions as Sickle cell thalassemia or Sickle cell Hemoglobin C thalassemia.

S Hemoglobin

Studies have been made on the incidence of S hemoglobin by itself and with other genes. Smith and Conley reported the following table from a study of the blood of 1000 patients.

Race	*No.*	*SS*		*AS*		*SC*		*AC*		*CC*	
		No.	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
White	500	0	0	0	0	0	0	0	0	0	0
Negro	500	5	1	36	7.2	1	.2	9	1.8	0	0

In a study by Schneider on 1550 negro patients admitted to a hospital for all reasons, the following percentages were obtained.

Hemoglobin type	*Number of cases*	*Percentage*
AS	139	9.0
AC	35	2.3
SS	4	0.3
SC	1	0
SF (thalassemia)	2	0.1

The sickling phenomenon is characteristic only of the S type of hemoglobin and has been studied quite extensively by Allison. He found that when cells sickle they lose potassium, gain sodium, and are able to synthesize less ATP than normal cells. Often when the cells sickle they clump together and cause vascular obstruction. A sickled cell will revert to a normally shaped cell if the oxygen tension in it is raised, but even if the cells reach the pulmonary vascular bed, the 15 seconds which it takes it to pass through is not sufficient to oxygenate them back to normal. The S type hemoglobin is apparently distributed throughout all of the red cells of an individual who has any hemoglobin S as any of the cells will sickle if exposed to a low enough oxygen tension. Allison also studied three factors in the sickling process, temperature, oxygen tension, and time.

DeTorregross reported one case of an individual who had both Sickle Cell trait (AS) and congenital spherocytosis. The individual was treated by splenectomy to which his spherocytosis responded quite well.

Hemoglobin C

The next most common abnormal hemoglobin is hemoglobin C. It is also exclusively found in the negro race and its incidence has been found to vary between 0 and 21 per cent by Neel in a study of the disease in African negroes. The gene for Hemoglobin C is an allele of A and S and occurs with both as well as with itself. When it occurs with itself, the condition is called Hemoglobin C disease and is characterized by increased fragility of the red blood cells, anemia, splenomegaly, and hematuria. When the C gene is combined with the A gene, the condition is called Hemoglobin C trait and is asymptomatic. The C gene combined with the S gene gives Sickle cell hemoglobin C disease and usually has the same symptoms as Sickle Cell Anemia. Hannon has reported vitreous hemorrhages in individuals with Sickle cell hemoglobin C disease (SC). The Frequency of the gene has already been given in the table of Schneider discussed with S hemoglobin.

Hemoglobin was found in individuals with thalassemia by Erlandson which turned out to be hemoglobin C in individuals in Italy. The individuals who were siblings were not negroes but negro ancestory could not be ruled out of their background.

Kraus and Diggs found that the C hemoglobin forms rhomboid crystals when it is allowed to dry slowly in cases of Hemoglobin C disease (CC), Sickle cell hemoglobin C disease (SC), and Thalassemia hemoglobin C disease but not in the hemoglobin C trait (AC). The same phenomenon was noticed in individuals with Hemoglobin C disease (CC) by Wheby. He also made the observation that the crystal formation did not occur in the individuals after they had a splenectomy performed whereas it did before the splenectomy.

D Hemoglobin

Hemoglobin D was not reported for some time after hemoglobin C, perhaps because the nature of it was not certain for a time after its discovery. The electrophoretic motility of D is identical with that of hemoglobin S and the two cannot be differentiated by electrophoresis. When hemoglobin of the motility of D is found it can only be differentiated from S hemoglobin by solubility determination or by running a sickling test on the cells in question.

Unlike S and C hemoglobins, D is not limited to the negro race but has been found in the negro. Chernoff has found the incidence of the D gene in the American negro to be .4 per cent and has reported cases of Hemoglobin D disease (DD), hemoglobin D trait (AD), Sickle cell hemoglobin D disease (SD) and possible Hemoglobin D thalassemia.

Chernoff suggested in 1955 that the D gene is allelic to A and S and is inherited as they are but Neel in 1957 suggested that there is no evidence that D is inherited as an allele of A and thought that it might be an allele of E, H, I, or M. He also suggested that it might be on a locus independent of any of these other hemoglobin genes.

Raper reported four cases of hemoglobin D in a study of 400 Gujerati Indians and Hynes reported a case of hemoglobin D in a Persian as well as the first case of proven Thalassemia hemoglobin D disease. It is difficult to distinguish homozygous hemoglobin D disease from thalassemia hemoglobin D disease because A hemoglobin does not show on the electrophoresis in either situation. In homozygous hemoglobin D disease, it is not produced because of the lack of a gene for its production while in thalassemia hemoglobin D disease the gene for A hemoglobin is present but its expression is suppressed by the thalassemia gene. The definitive diagnosis of thalassemia hemoglobin D disease is possible only if thalassemia is found in the family in such a way as to indicate that the person in question could have inherited it from his parent.

Hemoglobin D in the homozygous seems to be more benign than C or E as indicated by the number of target cells which are found in each condition.

Hemoglobin E

Hemoglobin E is generally limited to Southeast Asia. Jonxis has suggested that A_2 hemoglobin is the same as E hemoglobin and is nonspecifically present in many chronic diseases. Hemoglobin E can occur by itself in the homozygous condition or in combination with the S or normal A gene. Na-Nakorn in a study of E hemoglobin reported Hemoglobin E disease (EE), Hemoglobin E trait (AE) and Hemoglobin E thalassemia. In hemoglobin E disease (EE), a microcytic normochromic anemia is present with 25-60 per cent target cells being present. Na-Nakorn also reported that individuals with hemoglobin E thalassemia have splenomegaly while those with Hemoglobin E disease do not. Sickle cell hemoglobin E disease was found in an Eti-Turk from Turkey by Aksoy and Lehman giving more evidence that the gene is inherited as an allele of A, S, and C. In that case, the electrophoresis of the blood showed a composition of 40 per cent E hemoglobin and 60 per cent S hemoglobin. The patient was a female and her son also had ES phenotype and genotype which would at first lead one to assume that the two genes were on different loci. However studies indicated that the father, who was not available for study, had the S hemoglobin gene which then would allow the explanation of one locus to be more likely.

Punt reported two cases of thalassemia E disease in Indo-Europeans in which electrophoresis revealed small amounts of A hemoglobin and large amounts of E and F hemoglobin. Lehmann found 10 hemoglobin E traits (AE) and two hemoglobin E diseases (EE) in a study of 80 Burmese and from his studies concluded that Hemoglobin E disease is milder than Hemoglobin C disease.

Na-Nakorn in a study of Hemoglobin E found that in 36 cases of Hemoglobin E trait no symptoms were present. He also found in 32 cases of Hemoglobin E thalassemia that all individuals had symptoms during the first decade of life which included shortness of breath, palpitations, dyspnea on exertion, frequent upper respiratory infections, fever, intermittent jaundice, a large abdomen, poor appetite, poor physical and mental development, and light beards in the males. In these cases, electrophoresis showed the percentage of F hemoglobin to vary from 5.5 to 85.4 and all but three of these were between 15 and 40 per cent.

In individuals with hemoglobin E disease (EE), the following symptoms were noticed: Tiredness, easy fatigability, and mild arthralgia. In all of the cases, a microcytic normochromic anemia was present. Electrophoresis of the hemoglobin showed only E hemoglobin but alkali resistance studies up to 6.4 per cent F hemoglobin indicating that while E is an inhibitor of F hemoglobin, it is less of an inhibitor than is A hemoglobin. In comparison with hemoglobin C disease, hemoglobin E disease results in the production of less target cells and should be considered as a diagnostic possibility in a mild microcytic normochromic anemia which does not respond to iron therapy.

In the same study Na-Nakorn determined the incidence of E hemoglobin gene in Thai people. Some of the Thai are natives of that country and others are pure Chinese stock with many a mixture between these two extremes. 1006 individuals were studied and an over all incidence of 13.6 per cent was found. Of the 137 cases of hemoglobin E found, 134 were Hemoglobin E trait (AE) with the percentage of A hemoglobin being greater than that of E hemoglobin, while the three had all E hemoglobin by electrophoresis. The following information was found in relation to the ancestoral background and incidence of E hemoglobin.

Pure Thai	17.4%
½ to ⅞ Thai	11.0%
⅛ to ⅜ Thai	3.9%
Pure Chinese	0.0%

Hemoglobin G

Hemoglobin G was first reported by Edington and Lehmann in 1954 and since then has been found in combination with A and G hemoglobins and with

thalassemia. Schwartz pointed out that G is not inherited as an allele of A, S, or C hemoglobins or of thalassemia. He established this fact by finding cases in which the offspring inherited both G and S from one parent in one instance and G and Thalassemia from one parent in another instance. The G hemoglobin seems to have no detrimental effect on humans as Sickle cell hemoglobin G disease (GS) is symptomatically indistinguishable from Sickle cell trait (AS) and Hemoglobin G disease (GG) as well as Hemoglobin G trait (AG) are indistinguishable from the normal (AA) except by electrophoresis. Actually, an individual who has Hemoglobin G thalassemia fares much better than an individual who has thalassemia minor because the production of G hemoglobin is not suppressed by the thalassemia gene as much as is normal A hemoglobin.

The distribution of the G gene is not known as there are too few cases reported to make a study of this aspect of the disease. The abnormal hemoglobin was first found on the Gold Coast of Africa and has since been reported in the U.S.A. J. V. Neel believes that the gene for G hemoglobin is inherited from a locus different from A, S, and C.

H Hemoglobin

Hemoglobin H was reported first by Rigas in Chinese in 1955 and its distribution according to Chernoff is limited to the Chinese. Since his report, Hemoglobin H has been found by Allison in individuals from Greece and Turkey and by Brain in Naples. Wolf postulated that the hemoglobin H gene is increased in penetrance in the presence of the thalassemia gene as evidenced by one family history which was found in which neither parent had H hemoglobin by electrophoresis, but one had thalassemia minor and the offspring had Hemoglobin H thalassemia. Lie-Injo Luan Eng later presented five cases of Hemoglobin H in the absence of thalassemia in which the parents had no H hemoglobin by electrophoresis. He suggested that the hemoglobin H gene is inherited as a simple recessive and is expressed only in the homozygous state or in the presence of the thalassemia gene which apparently does enhance its penetrance.

Hemoglobin H is quite unstable and when allowed to stand disintegrates. As hemoglobin G, hemoglobin H is thought to have arisen as the result of a mutation and is kept low by selection against it.

Hemoglobin I was first reported by Page in a few individuals in the U. S. A. Not much is known about hemoglobin I except that it is not confined to the negro race and is quite rare. It has not been established as being inherited in the same or different locus than the A, S, C locus since it has not been found occurring with these genes.

Hemoglobin J was discovered and reported in 1955 by Thorup in an American family. It was also found in a white person of French-Canadian ancestory and in an Indonesian. It has been suggested that J is identical with Liberian I hemoglobin which is discussed farther on in this paper. Too few cases are available to make a distributional study. Raper reported hemoglobin J in Gujerati Indians. McCabe has estimated that in the Hemoglobin J trait (AJ), more than one half of the hemoglobin is the J type.

Hemoglobin K was first reported as I, redesignated as J and then finally as K. It was first reported by Cabannes in India in 1956. It has been suggested that Liberian II and K are the same hemoglobin. Ager and Lehmann reported this hemoglobin in an East Indian family and in a London resident of South African ancestory.

Hemoglobin L

Hemoglobin L was discovered in a family of Hindu ancestory by Ager and Lehmann in 1957. Little has been reported in the literature concerning this abnormal hemoglobin.

Hemoglobin M was discovered in individuals of German ancestory and differs from the other hemoglobins in that it has a different spectrophotometric absorption band. It was actually discovered in Germany but since has been found in individuals of German descent in the United States. Attempts to separate the M hemoglobin from A hemoglobin by paper electrophoresis have been unsuccessful. Recently Gerald has been able to separate M hemoglobin from A hemoglobin electrophoretically by the use of starch block electrophoresis. He found that Hemoglobin M moves slightly slower than A and in the cases which he studied M composed about 30 per cent of the total hemoglobin of the individual, the remaining portion being made up entirely of A hemoglobin.

In 1956, Robinson reported two new hemoglobins from Liberia which he designated as Liberian I and Liberian II until they could be further studied and assigned a letter. Since that time, further studies have been carried out and as previously suspected, Liberian II was found to be identical with Hemoglobin K. Liberian I was found to be identical with no previously described hemoglobin and was assigned the letter N to designate it.

Hemoglobin O (Buginese X) was reported in June 1958 by Lie-Injo Luan Eng to occur in the Buginese of Sulawesi. It was previously reported in an Indonesian journal but attracted almost no attention because of the language and journal in which it was reported. Since that time it has been studied and some of its properties determined. Thus far, hemoglobin O has been found only in individuals

from the Indonesian island of Sulawesi and the incidence of the various parts of the island is given below:

6 Hemoglobin O carriers of 455 Buginese in Sulawesi.
3 Hemoglobin O carriers of 136 Makassars of South Sulawesi.
1 Hemoglobin O carrier of 107 Goroutatos of North Sulawesi.
1 Hemoglobin O carrier of 77 Toradjas who originated in Central Sulawesi but live in Makassar.

No family studies have been made on individuals with hemoglobin O. The only abnormal finding in the studies made on the homoglobin was an increased resistance of the cells to lysis by hypotonic saline.

New Discoveries

Three new hemoglobins have been discovered and reported by name only. This is a temporary name and will be dropped when the hemoglobins have been studied more extensively and agreement is reached as to the letter which should be used to designate them. This method of naming the new hemoglobins avoids much repetition and confusion in nomenclature.

One of the new hemoglobins is known as "Bart's" Hemoglobin and was reported by Ager and Lehmann in August 1958. It was found in an infant four weeks of age whose parents both had normal hemoglobin and is to date the most rapidly moving hemoglobin which has been found. It is thought to be an abnormal fetal hemoglobin. Electrophoretic studies showed the following composition:

A hemoglobin	40%
F hemoglobin	36%
Bart's hemoglobin	24%

Studies on this hemoglobin have revealed that it is about one half alkali resistant.

Another recent hemoglobin is "Norfolk" hemoglobin which was reported in August 1958 by Ager and Lehmann. This hemoglobin was found in individuals of Norfolk family stock and are purely English. The father and younger brother of the patient in whom the new hemoglobin was found were also found to be carriers of the new hemoglobin. In all of the cases studied, a normal blood picture was found except for electrophoresis. On paper electrophoresis, hemoglobin Norfolk is very close to and yet distinguishable from Hemoglobin J.

The most recent hemoglobin reported is one known as Hemoglobin "Lepore" which was reported by Gerald and Diamond in September, 1958. The discovery was found by starch block electrophoresis and was associated with an increased level of A_2 Hemoglobin.

Thalassemia is considered in this discussion of abnormal hemoglobins because it causes the expression of some of the abnormal hemoglobins and prevents the expression of normal A hemoglobin. Thalassemia, which is also known as Cooley's anemia and Mediterranean anemia is a disease in which the production of normal hemoglobin is suppressed resulting in a mild or severe anemia. It is controlled by a different set of genes than those which directly control the type of hemoglobin produced in an individual and it has been suggested that there are actually several thalassemias. Thalassemia can be present in a homozygous or heterozygous condition. Heterozygous disease is known as thalassemia minor and is manifest by a mild anemia and the presence of target cells. Homozygous disease is known as thalassemia major and is characterized by a severe anemia, splenomegaly and usually results in death in the first decade of life. The only treatment for thalassemia is blood transfusion to relieve the anemia and splenectomy. The splenectomy is performed not to relieve the anemia as in congenital hemolytic anemia, but to relieve a greatly distended abdomen. Often the spleen is enlarged to the pelvic brim.

Thalassemia causes the presence of F and A_2 hemoglobins as a compensatory reaction to partially replace the normal A hemoglobin whose production is suppressed. Thalassemia apparently causes the expression of H hemoglobin by increasing the penetrance of the gene responsible for hemoglobin H production making it dominant whereas normally it would be recessive.

Since thalassemia is a hereditary disease, a family history of anemia is important in establishing the diagnosis. If unrecognized, thalassemia will obscure the diagnosis of an abnormal hemoglobin trait and will make it appear as an abnormal hemoglobin disease because hemoglobin A does not appear on electrophoretic study. Usually F hemoglobin is present in the electrophoretic study as a clue that thalassemia is present. Thalassemia has been found with the following genotypes: AA, AS, SC, AE, AD, AC, and AH.

Abnormal hemoglobin studies in the human has stimulated studies of the hemoglobins of other animals in which the genetic aspects of the disease can be more easily studied by selective breeding. The hemoglobins of many animals have been studied including the following: Horses, snakes, turtles, crocodiles, lizards, frogs, sheep, pigeons, ducks, guinea fowl, chickens, parakeets, koel, cows, goats, rabbits, dogs, alligators, and cattle breeds of Great Britain.

Some interesting results were found in the animal

hemoglobin studies. All of them seem to be inherited by simple mendelian mechanisms. Bangham in his studies of cattle found that there is a close connection between the hemoglobin type and the level of the butter fat in the milk of the cattle indicating that the two genes which control these two traits are quite close to each other or at least on the same chromosome.

The avian studies revealed an avian hemoglobin faster than normal which had almost the same motility as some of the human and mammalian hemoglobins indicating a possible common ancestory. Sheep have been found to have at least two different hemoglobins as well as a fetal type. In general amphibian hemoglobins are slower than that of lizards and crocodiles. Turtles have two hemoglobins normally present, one about the speed of human S hemoglobin and one twice as fast. In horses, at least three hemoglobin types are present but have been shown not to be alleles.

Several methods of analysis of the hemoglobins have been developed and used. Paper electrophoresis is the most popular and simplest method of analysis and according to Itano it has accelerated research in this field more than any other one factor. The method of Chernoff consists of placing a sample of the hemoglobin from lysed cells to be tested on a strip of filter paper which is saturated with a buffered solution of known pH in an electrophoretic field. The hemoglobin then migrates toward the anode or cathode depending on the pH of the buffer solution and the isoelectric point of the hemoglobin. The migration is dependent on the nature of the globin and is not effected by the state of oxidation of the iron of the molecule so that oxy- and carbon monoxy-hemoglobin migrate at the same speed. Following is a diagram of the motility of some of the hemoglobins as given by Lehmann.

The main drawback to the method of determining hemoglobins before 1957 was that in order to determine a hemoglobin type one would have to first run it with normal hemoglobin and if it was found to be abnormal, a repeat run was necessary simultaneously with each hemoglobin which it resembled in order to distinguish it from each one. This made the identification of abnormal hemoglobins time consuming and laborious. In 1957, Wael and Punt determined the absolute motilities of three hemoglobins and suggested that all hemoglobins could be expressed in terms of their absolute motility. The motility is expressed in centimeters squared per voltage per second x 10^{-5}. The following motilities were found and reported:

Hemoglobin A .. 3.12 cm^2 $volts^{-1}$ $seconds^{-1}$ x 10^{-5}
Hemoglobin F .. 3.87 cm^2 $volts^{-1}$ $seconds^{-1}$ x 10^{-5}
Hemoglobin C .. 2.20 cm^2 $volts^{-1}$ $seconds^{-1}$ x 10^{-5}

Using this method, any voltage or time can be used and the motility determined and compared with results obtained by other investigators who may have used a different voltage or time in their determinations. Roonan and Ebaugh have run and reported the motilities of several abnormal hemoglobins relative to that of normal A hemoglobin.

Huisman and Prins reported another method of hemoglobin determination and separation which consisted of the chromatographic separation in a column of Amberlite 150 resin. The method was compared with paper electrophoresis in the article and the only significant difference was that Hemoglobins E and J separated better on paper while the column separated F and H better.

Kunkel and Wallenius reported using moist starch slabs to support the hemoglobin in an electrophoretic field for separation. Robinson reported good results using a buffered agar gel for supporting the hemoglobin.

Other methods of analysis which distinguish one hemoglobin from another include solubility determination for any hemoglobin, sickling to determine S hemoglobin, alkali resistance to determine F hemoglobin and spectrophotometric methods to determine Hemoglobin M. Electrophoresis on a starch gel has also been used.

Studies on the amino acid composition of several hemoglobins have been carried out and an excellent report on this subject is given by Huisman. Murayama has studied and reported the conformation differences in the sulphydryl groups in some of the hemoglobins. Huisman in attempting to determine the basic difference in the abnormal hemoglobins made a study of the N-terminal residues of human hemoglobins and concluded that the results which he obtained could be explained on the basis of changes in the structure of the polypeptide chains of the protein.

In addition to the salmonella osteomyelitis previously mentioned, there are two fairly common diseases associated with the abnormal hemoglobins. These are cholelithiasis and gout. Both of these diseases are thought to be due to an excess breakdown

(Continued on page 456)

The President's Message

Having just returned from the A.M.A. meeting in Miami, I feel some report should be made of the activities at this meeting.

Kansas was represented by our outstanding delegates, Drs. Lucien Pyle and George Gsell. The alternate delegates were Drs. Norton Francis, Wichita; Clair O'Donnell, Ellsworth; and myself, of Sabetha. Wives present were Mrs. L. R. Pyle, Mrs. C. O'Donnell and Mrs. F. E. Wrightman, all of whom were delegates assisting Mrs. Chester Young, president of the Woman's Auxiliary, and Mrs. W. T. Braun, president-elect of the auxiliary.

On Sunday afternoon the speech given by Mr. Paul Butler was resented by the entire audience, regardless of political affiliation, because of the vicious attack on the medical profession.

Attending the Reference Committees of the House of Delegates is an experience everyone should have, for it makes one realize that the A.M.A. is a Democratic organization—the purpose of which is to help solve the many problems of the Medical Profession on a national basis.

On Monday morning we were privileged to hear Mr. Lock, an executive of Continental Oil Company. His talk was serious and made us all conscious of the fact that everyone, whether Democrat or Republican, should first be for the individual upholding American principals of free enterprise and the intent of the Constitution of the United States.

Then came the proud moment when the Kansas Medical Society received an Award of Merit from the American Medical Education Foundation for the outstanding contribution to the preservation and continuance of the high standards of medical education in the United States of America. We owe this distinction to the untiring efforts of Dr. C. V. Black and the outstanding co-operation of the Auxiliary. We owe to them an everlasting debt of gratitude and to those who contributed to A.M.E.F.

Cordially Yours,

F. E. Wrightman

President

Editorial COMMENT

Political Responsibility

When this is read, the primary elections will be past and the serious business of choosing an individual for an office will be at hand. Careful scrutiny of party platforms and of individual policy declarations by candidates themselves will become important. The medical profession with its specific responsibility for health care will have not only a particular interest but an exceptional public obligation toward the outcome of the November election.

Because there exists certain legal restrictions governing political activities, it appears a few might be mentioned at this time while interest in this subject is greater than normal. For example, an individual citizen is permitted some activities denied to organizations. The following is summarized from a memorandum issued by the Law Division of the American Medical Association on this subject.

A medical society might properly engage in:

1. The preparation and publication of information, whether critical, favorable or factual only, describing the position or attitude taken by political parties or candidates on any issue in which the association or its members has an interest.

2. The preparation and distribution to its members of the voting records of members of Congress.

3. The preparation and dissemination of information and advice on how physicians can or should organize for political action.

4. The distribution of information giving pertinent data regarding the position of particular parties or candidates, where they derive support, etc.

5. Urging its members to evaluate the background, viewpoint, competence, etcs., of candidates or political parties.

6. Sponsoring or encouraging members to organize local "get-out-the-vote" drives, including campaigns to get voters to register, arrangements for transportation of voters to polling places and the urging of physicians generally to participate in and assist such local "get-out-the-vote" drives.

7. Promoting organization of local committees of doctors to become more interested and active in local, state and national government, and in politics generally. However, if such committees become active in the support of particular candidates or parties, a medical association legally could not use its funds or staff in support of such efforts. While active assistance in organizing such committees would be permitted, an association could not use such committees as vehicles for contributing support to candidates or parties.

A medical society may not use its funds to contribute to any candidate or party either directly or indirectly, nor may it prepare campaign literature in behalf of a candidate or a party, nor furnish advertising space, radio or T.V. time for the purpose of giving active support or oposition to particular candidates or parties. The medical society could legally encourage its members to participate actively in politics or elections but this must be differentiated from recruiting help for political committees, candidates or parties.

An individual member of the medical profession may freely and extensively engage in political activities, may contribute and expend funds, make political speeches, distribute pamphlets and engage in electioning for or against any particular candidate unless these activities are specifically restricted by law. He may contribute not more than $5,000 in any one year to a candidate or to a political party.

The Kansas Medical Society is much concerned over the necessity of providing the public with sound legislation in the field of health. These broad principles are familiar to every member. The election of persons with views toward health care that coincide with the opinion of the medical profession becomes the responsibility of the physician himself and his individual effort.

Malpractice Definition

The Kansas Medical Society requests assistance from its members upon the question of whether it is possible to legally define areas of malpractice lia-

bility. The question is whether a law can be passed that will fully protect the rights of the individual patient but can provide a safeguard to the physician against the many unwarranted lawsuits that increasingly find their way into the courts.

The Executive Committee of the Society under the direction of F. E. Wrightman, M.D., president, appointed a committee of 14 members on a basis of age, geographical location and specialty interest. They will meet between now and January, as long as their work holds hope for success, in an effort to prepare a set of principles upon which a malpractice law can be based. The committee and the Society will appreciate any suggestions members have concerning ways in which such a law might be prepared and, most especially, will suggestions for the inclusion of specific items be appreciated. These may be sent to the Executive office, 315 West Fourth Street, Topeka, Kansas.

In its broadest terms, the law governing malpractice implies a physician is expected to possess the skill and to exercise the care commonly possessed and exercised by other reputable physicians in the locality. If he holds himself out as a specialist, he must meet the standards of practice of a specialist in his designated field of practice.

The courts have continuously broadened the obligations of physicians to a point where the end result, rather than the procedure, is becoming a factor and most recently it appears the patient's full knowledge of each procedure employed is to be a criterion.

At one time the courts ruled medicine was a technical science not understood by the layman. Expert testimony was needed to establish whether an acceptable standard of practice had been employed. Later the doctrine *Res Ipsa Loquitur* (which means "the thing speaks for itself"), was occasionally admitted in malpractice cases and the result became an integral factor in malpractice actions.

More recently the courts held that a person's body is his individual possession. He may permit or refuse to permit a physician to treat him but, unless he is fully informed of the dangers involved in a required treatment, he is unable to give an informed consent. The element of assault or breach of contract then becomes a factor.

It may be entirely impossible to define areas of malpractice which can defend the ethical physician who used proper judgement and exercised proper skill without restricting the personal liberty of his patient. This committee will study that problem in the hope that something can be accomplished which will benefit the medical profession and at the same time protect the patient but eliminate the hazard of unwarranted court procedures. If this is to be accomplished, the individual suggestions and advice of individual members will be essential.

Power of Language

In June 1957 the House of Delegates of the American Medical Association adopted a new Principles of Medical Ethics. These consist of a preamble and ten sections. They replace what had grown to be a preamble and 47 sections. In substance, everything from the previous model has been retained.

Unnecessary words have been deleted. A more modern effect has been achieved. All elements of the classic ethics are embodied in the new document. The change, however, has been accomplished at a sacrifice of some eloquence of expression. One such example is here selected primarily for the purpose of preserving a dignified and poetic expression that was contained in the former document.

Today Section 2 of the Principles of Medical Ethics says "Physicians should strive continually to improve medical knowledge and skill, and should make available to their patients and colleagues the benefits of their professional attainments."

Chapter I, Section 2 of the previous Code of Ethics said the same thing in these words.

"The avowed objective of the profession of medicine is the common good of mankind. Physicians faithful to the ancient tenets of this profession are ever cognizant of the fact that they are trustees of medical knowledge and skill and that they must dispense the benefits of their special attainments in medicine to all who need them. Physicians dedicate their lives to the alleviation of suffering, to the enhancement and prolongation of life, and to the destinies of humanity. They share whatever they have learned and whatever they may discover with their colleagues in every part of the globe. They recognize instinctively that the need for improvement of medical knowledge and skills is never at an end, and while they strive toward satisfaction of this need they are zealous in making available to physicians of good character who possess the desire and the ability to learn the aggregate of progress in medical education, research, and discoveries as they may exist at the time. They do not remain content to limit their activities to the care of the infirm, since they recognize also their useful rank among the vast concourse of citizens on whose shoulders the destiny of our nation rests. At the same time they will resist attempts to debase their services by diverting them to ignoble purposes. In their relationships with patients, with colleagues, and with the public, they maintain under God, as they have down the ages, the most inflexible standards of personal honor."

A.M.A. House of Delegates

109th Annual Meeting—Delegates Report

We found the meeting of the 109th House of Delegates rather calm and cool. This was in sharp contrast to the weather—which was hot. Some of the issues discussed and acted upon in this year's meeting held in Miami Beach, June 13-17, were: Health Care for the Aged (foremost topic), occupational health programs, pharmaceutical issues and other allied groups relations, and our relations with the National Foundation. Many other subjects were brought before the house, but these were the main points concerning policy.

Officially representing Kansas along with us, were your president, Dr. F. E. Wrightman, Sabetha; and alternate delegates, Drs. N. L. Francis, Wichita, and H. St. Clair O'Donnell, Ellsworth. There were several other doctors from Kansas attending the meeting and the Woman's Auxiliary was well represented by the wives.

Elections

Dr. Leonard W. Larson of Bismarck, N. D., former chairman of the A.M.A. Board of Trustees and of the A.M.A. Commission on Medical Care Plans, was named president-elect by unanimous vote. Dr. Larson is to succeed Dr. E. Vincent Askey of Los Angeles as president at the next annual meeting (June, 1961, at New York City).

The A.M.A. 1960 Distinguished Service Award was given to Dr. Charles A. Doan, who will retire next year as dean of the Ohio State University College of Medicine and director of the Health Center in Columbus, Ohio.

Total registration at the last report given and with half a day of the meeting still remaining, had reached 19,107, including 8,706 physicians.

Health Care for the Aged

All year the physicians of Kansas have been receiving information concerning this problem from the A.M.A. and the State office. Unfortunately the problem still exists. Here in part is some of the action taken at the meeting on it.

After considering a variety of reports, resolutions and comments on the subject of Health Care for the Aged, the House of Delegates adopted the following statement as official policy of the American Medical Association:

"Personal medical care is primarily the responsibility of the individual. When he is unable to provide this care for himself, the responsibility should properly pass to his family, the community, the county, the state, and only when all these fail, to the federal government, and then only in conjunction with the other levels of government, in the above order. The determination of medical need should be made by a physician and the determination of eligibility should be made at the local level with local administration and control. The principle of freedom of choice should be preserved. The use of tax funds under the above conditions to pay for such care, whether through the purchase of health insurance or by direct payment, provided local option is assured, is inherent in this concept and is not inconsistent with previous actions of the House of Delegates of the American Medical Association."

The House also urged the Board of Trustees "to initiate a nonpartisan open assembly to which all interested representative groups are invited for the purpose of developing the specifics of a sound approach to the health service and facilities needed by the aged, and that thereafter the American Medical Association present its findings and positive principles to the people."

In connection with an educational program regarding the aged, the House declared that "the American Medical Association increase its educational program regarding employment of those over 65, emphasizing voluntary, gradual and individualized retirement, thereby giving these individuals not only the right to work but the right to live in a free society with dignity and pride."

Earlier, at the opening session, Dr. Louis M. Orr, retiring A.M.A. president, had asked the House to go on record favoring more jobs for the aged, voluntary retirement and a campaign against discrimination because of age, whether it be 40 or 65. The House also gave wholehearted approval to Dr. Askey's urging that state medical societies take an active part in state conferences and other planning activities preceding the January, 1961, White House Conference on Aging.

Pharmaceutical Issues

In the pharmaceutical area the House took two actions—one regarding mail order drug houses and the other involving the development and marketing of pharmaceutical products.

The House agreed with representatives of the pharmacy profession that the unorthodox practice of mail order filling of prescription drugs is not in the best interest of the patient, except where unavoidable because of geographic isolation of the patient. The

statement pointed out that in this process the direct personal relationship, which exists between the patient-physician-pharmacist at the community level and which is essential to the public health and the welfare of patients, is lost.

The House also directed the Board of Trustees to request the Council on Drugs and other appropriate Association councils and committees "to study the pharmaceutical field in its relationship to medicine and the public, to correlate available material, and after consultation with the several branches of clinical medicine, clinical research, and medical education and other interested groups or agencies, submit an objective appraisal to the House of Delegates in June, 1961." The statement pointed out that certain proposals have been made which, if carried out, might impair the future of pharmaceutical research and development, thus retarding the progress of scientific therapy. It also said that the services of the pharmaceutical industry are so vital to the public and to the medical profession that an objective study should be made.

Occupational Health Programs

The House approved a revised statement on the "Scope, Objectives and Functions of Occupational Health Programs," which was originally adopted in June, 1957. The new statement contains no fundamental alterations in A.M.A. policy or ethical relationships, but it adds important new material on the following points:

1. Greater emphasis on the preventative and health maintenance concepts of occupational health programs.
2. A more positive statement of organized medicine's obligation to provide leadership in improving occupational health services by part-time physicians in small industry.
3. Increased emphasis on rehabilitation of the occupationally ill and injured.
4. Inclusion of the proper use of immunization procedures for employes, as approved by the House in 1959.
5. A more adequate statement on the need for teamwork with lay industrial hygienists in tailoring each occupational health program to the particular employe group involved.

In approving the revised guides for occupational health programs, the House also accepted a suggestion that the A.M.A. Council on Occupational Health undertake a project to study and encourage the employment of the physically handicapped.

Allied Health Groups

The House approved the final report of the Committee to Study the Relationships of Medicine with Allied Health Professions and Services and commended it as "a monumental work." The report covers the present situation, future implications and recommendations, including guiding principles and approaches to activate physician leadership. The House strongly recommended that A.M.A. activity in this vitally important area be continued and it approved the appointment of a Board of Trustees committee to carry on the work.

To develop physician leadership in promoting cooperative efforts with allied health professions and services, the report suggested the following A.M.A. activities:

1. A general conference should be held with allied scientists in the basic medical sciences and related disciplines for discussion of matters of common concern related to the creation of permanent, cooperative activities.
2. Specific exploratory conferences should be held with members of segments of science allied to a given area of medical practice with the national medical organizations concerned.
3. General and specific conferences should be held with professional and technical assistants on education, recruitment and coordination of contributions.
4. Through meetings and publications, reciprocal exchange of information should be provided between physicians and allied scientists and members of health professions.
5. Effective, continuing liaison should be established between A.M.A. representatives and professional and technical personnel.

National Foundation

The House took two actions involving relations between the medical profession and the National Foundation. It adopted a statement of policies for the guidance of state medical associations and recommended that they be adopted by all component medical societies. These policies cover such subjects as membership of medical advisory committees at the chapter level, the function of these committees, and basic principles concerning financial assistance for medical care, payment for physicians' services and physicians' responsibilities for constructive leadership in medical advisory activities.

In another action the House directed the Board of Trustees to authorize further conferences with leaders in the National Foundation on the problem of poliomyelitis as it relates to the betterment of the public health and to consider further joint action toward the eradication of polio. The House commended the National Foundation for its outstanding service in the attack against polio, but pointed out that much work remains to be done in public education, vaccination, continuing assistance for polio victims and continued research.

Miscellaneous Actions

In dealing with reports and resolutions on a wide variety of other subjects, the House also:

Strongly reaffirmed its support of the *Blue Shield concept* in voluntary health insurance and approved specific recommendations concerning A.M.A.-Blue Shield relationships;

Approved a contingent appointment of not more than six months for *foreign medical school graduates* who have been accepted for the September, 1960, qualification examination;

Agreed that the American Medical Association should sponsor a *second National Congress on prepaid health insurance;*

Approved a Board of Trustees request to the Postmaster General for a stamp commemorating the *Mayo Brothers;*

Decided that the establishment of a home for *aged and retired physicians* is not warranted at this time.

Approved the establishment of a new *"Scientific Achievement Award"* to be given to a non-physician scientist on special occasions for outstanding work;

Approved the following schedule for future *annual meetings:* Atlantic City, 1963; San Francisco, 1964, and New York City, 1965;

Approved the objectives of the A.M.A. *Commission on the Cost of Medical Care* established by the Board of Trustees and headed by Dr. Louis M. Orr, immediate past president of the Association;

Urged individual members of the Association to take a greater interest and more active part in *public affairs* on all levels;

Reaffirmed its opposition to compulsory inclusion of physicians under Title II of the *Social Security* Act and recommended immediate action by all A.M.A. members who agree with that position;

Called for a review of existing and proposed legislation pertaining to *food and color additives,* with the objection of supporting appropriate measures which are in the public interest;

Urged reform of the *federal tax structure* so as to return to the states and their political subdivisions, their traditional revenue sources;

Asked state and county medical societies to make greater use of A.M.A. *recruitment materials* in presenting medicine's story to the nation's high schools;

Requested the Board of Trustees to initiate a study of present policy regarding the required content and method of preparing *hospital records;*

Commended the Department of Defense and the Air Force for establishing and operating the *Aeromedical Transport Service* and urged that it be maintained at optimum efficiency;

Directed the Board of Trustees to develop *group annuity* and *group disability* insurance programs for Association members; and

Expressed grave concern over the indiscriminate use of *contact lenses.*

Addresses and Awards

Dr. Orr, in his final report to the House at the opening session, urged medical societies to "adopt" rural villages, cities and regions in underdeveloped parts of the world and to send them medical, clinical and hospital supplies.

Dr. Askey, in his inaugural address Tuesday night, declared that medicine faces its greatest challenge in the decade ahead, adding that physicians must prove the effectiveness of medicine practiced in a free society. Dr. John S. Millis (Ph.D.), president of Western Reserve University, Cleveland, Ohio, and guest speaker at the inaugural ceremonies, said the human dilemma of the sixties is an increasing desire for security and authority with a diminishing desire for responsibility.

At the Wednesday session of the House, Dr. Askey urged intensified, accelerated effort in five areas—medical education, preparations for the White House Conference on Aging next January, health insurance and third party relationships, mental health, and membership relations.

Election of Officers

In addition to Dr. Larson, the new president-elect, the following officers were named at the Thursday session:

Dr. William F. Costello of Dover, N. J., vice president; Dr. Norman A. Welch of Boston, re-elected speaker of the House, and Dr. Milford O. Rouse of Dallas, Texas, re-elected vice speaker.

Dr. Gerald D. Dorman of New York City was elected to the Board of Trustees to succeed Dr. Larson, and Dr. James Z. Appel of Lancaster, Pa., was re-elected to the Board.

Elected to the Judicial Council, to succeed Dr. Louis A. Buie of Rochester, Minn., was Dr. James H. Berge of Seattle.

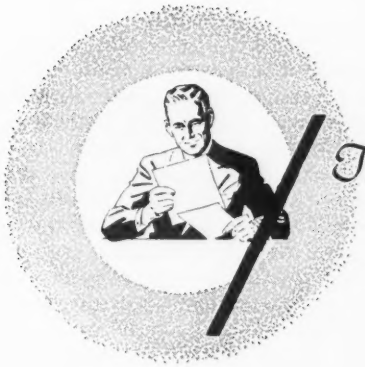
Named to the Council on Medical Education and Hospitals were Dr. William R. Willard of Lexington, Ky., succeeding Dr. James M. Faulkner of Cambridge, Mass., and Dr. Harlan English of Danville, Ill., who was re-elected.

On the Council on Medical Service, the House re-elected Dr. Russell B. Roth of Erie, Pa., and Dr. Hoyt B. Woolley of Idaho Falls.

Dr. George D. Johnson of Spartanburg, S. C., was named to succeed Dr. Pickett on the Council on Constitution and By laws.

On the whole the meeting was very enjoyable and we hope a profitable one for the practice of medicine.

G. F. Gsell, M.D.
L. R. Pyle, M.D.



The Business Side of Medicine

Should You Incorporate Your Medical Building?

FLOYD F. WEHRENBERG, ***Kansas City***

The tax savings possible through incorporation of medical buildings as compared to partnership or individual ownership is frequently misunderstood. Actually, if you are in a tax bracket below 47 per cent, there may be a real disadvantage in incorporating your medical building.

The Federal Income Tax on corporate earnings is 30 per cent of the first $25,000 net profit. From this fact many people erroneously reason that if they are in a tax bracket over 30 per cent they will benefit tax-wise. However, this is only true if the earnings are never to be returned to your use. If at any time you need these earnings, you will have to pay regular individual tax rates on the money paid out at dividends. On the other hand, if all earnings remain until the corporation is liquidated, you will have a capital gain taxable at a maximum rate of 25 per cent since the earnings retained will have increased the value of your shares of stock.

Tax Trap

Following is an example of the possible tax trap involved in corporate ownership. Assume that four doctors each invest $10,000 in stock in a medical building corporation, making a total of $40,000. The corporation acquires a $75,000 lot and building and assumes a $35,000 mortgage. If the net profit from operating the building is $5,000 per year, the corporation would pay $1,500 income tax each year and would have $3,500 funds to reduce the mortgage. Over a ten-year period the corporation would pay $15,000 tax and the mortgage would be liquidated. At the end of the ten years, assume that the building is sold for $75,000 and the corporation is liquidated. Each stockholder would receive $18,750 for his original $10,000 invested and would have a capital gain of $8,750 taxable at 25 per cent. The four doctors together would pay an additional tax of $8,750 making the total tax on the corporate income $23,750, or 47.5 per cent. From this it can be seen that if these doctors were in an average top tax bracket of less than 47 per cent, they would have paid more tax through incorporation than they would have by partnership. This illustration shows the minimum tax payable. Remember that if the income had been paid out each year as dividends, it would have been fully taxed as ordinary income and the tax would be considerably higher.

Organizing Costs

Another point to bear in mind besides the possible tax disadvantage is that the cost of organizing a corporation will range from $400 to $1,000 as compared to $25 to $100 for a partnership. Also, the administration and accounting for a corporation are more complicated and expensive.

For those in tax brackets less than 47 per cent, the major advantage to incorporating lies in the limited liability of corporate stockholders as compared to un-

Mr. Wehrenberg is Missouri-Kansas manager, Professional Management Midwest, 4010 Washington Street, Kansas City, Missouri.

limited liability of partners. This can be an important factor if several physicians with individual practices are involved as opposed to a professional partnership or a clinic group. When a corporation is organized for this purpose, it is best to establish a rental that will just meet expenses and yield no profit to be taxed to the corporation.

Another frequent misconception is that incorporation is ideal for transferring funds to children and thereby gaining a tax savings. Because the income of the corporation is subject to the 30 per cent tax up to $25,000 before the children receive it, there is much less advantage to giving children corporate income than there is in giving them dividends or other income through a short-term trust or outright gift.

These are some of the problems that must be considered in deciding on the form of ownership to adopt for a medical building. Such a decision cannot and should not be made without first thoroughly studying all the factors involved. To be sure that your decision will best fit your individual situation, this study should be made by you with the assistance of your legal and financial advisors.

American Diet Poor

Increasing evidence points to a sufficiently close relationship between a diet high in animal fats and the onset of atherosclerosis to warrant "specific recommendations on the composition of the average American diet, Dr. Laurance Kinsell, Director of the Institute for Metabolic Research, Oakland, California, declared in a talk at the annual meeting of the American Geriatrics Society. The two-day meeting was held at the Americana Hotel, Miami, Florida.

Extensive research, stemming from a report 10 years ago on studies conducted in this field at the Institute, has demonstrated that when vegetable fats are substituted for fats of dairy origin in the diet, a major decrease in the level of cholesterol and other fats in the blood results, he said.

Moreover, there is now "general agreement" that elevated blood fats predispose to the development of atherosclerosis, with its catastrophic sequelae of such conditions as strokes, coronary heart disease and the "even more grim occurrence of chronic cerebral deterioration and resultant senility."

Best evidence for this link is the fact that almost 100 per cent of patients with precocious coronary disease (that is, coronary disease occurring earlier than the average period) have "significantly higher blood fats" than normal persons.

There is therefore "good reason to expect that dietary or other procedures which will lower abnormally elevated fats to a normal range" will prevent the development of atherosclerosis or, under some conditions, result in its regression, he stated.

Active Principle

Studies at an institute have shown that the "active principle" in vegetable fats which produced lowering of blood fats in the diet is linoleic acid, a polyunsaturated fatty acid with two bonds.

Additional studies over the past year have shown, for the first time that inclusion of adequate amounts of fatty acids such as linoleic acid in the diet results in an actual decrease in the rate at which cholesterol is formed. The studies were performed with tracer amounts of cholesterol precursors tagged with a radioactive isotope.

It was reported on results of studies conducted for more than six years on patients receiving diets containing much more than average amounts of linoleic acid, and less than average amounts of saturated fatty acids (present in meat, milk, eggs, and hydrogenated shortenings, and margarines).

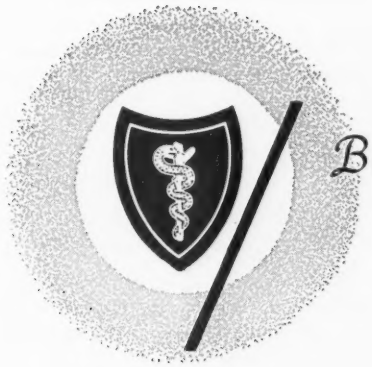
He noted that many diabetic patients were better controlled in their diabetes on this type of diet than on any other type of diet which had been used; also, that there is evidence that linoleic acid "exerts a significant effect upon the use of sugars as well as upon the way fats are handled."

Results of the studies include the following:

1. Such a diet can be thoroughly palatable;
2. It must be "tailor-made" to the individual, since some individuals require larger amounts of linoleic acid to obtain a given amount of lowering of blood fats than other patients;
3. It calls for "careful education" of the patient and his family;
4. Over this six-year period, no undesirable effects have been noted in any instance, except for occasional food allergy or idiosyncrasy.

It was recently stressed that if the use of a diet relatively high in polyunsaturated and relatively low in saturated fats is "actually of major value" in preventing or halting atherosclerosis, the earlier it is instituted, the better.

The late stages of atherosclerosis are associated with extensive replacement of normal arterial tissues by tough, fibrous tissue and lime salts, and by the time this stage has been reached, the likelihood of any reversibility is remote. It seems probable, therefore, that despite the fact that further period of observation is necessary in order to obtain final answers, the time is already at hand when carefully thought-out recommendations should be made with regard to modification of the American diet.



Blue Shield

Two Major Changes Coming

During the next few months a number of changes are being made in Blue Cross-Blue Shield procedures and since at least two of these changes will be of interest and directly affect Blue Shield physicians and medical assistants, they are being described in the following paragraphs.

New Service Statement Forms

A new Blue Shield Service Statement Form is to be introduced and is expected to be in use by the end of this year. This new form will be the size of an IBM punched card. It is being designed with an eye to eliminating possibilities for errors, as well as to save time and money in operation. It will result in more accurate payments to the physicians, and will make it easier for medical assistants to complete, since information has been reduced to a minimum.

Early this year, this new card-form Service Statement was tried as an experiment with most of the physicians in the Topeka area. About 50 physicians' offices in Topeka participated in the experiment, representing a large share of the claims submitted in that area. It met with practically unanimous approval—doctors and medical assistants stated that it made their work far simpler, as well as helping to eliminate chances for error on their part. The card as it will finally appear has been revised in accordance with suggestions made by the Topeka physicians who used it.

One important change in the new form is the fact that the physician's name and code number will appear on the card when it is received by him. This will tend to greatly reduce errors in payment, it is believed.

The new form now has the approval of the Blue Shield Board of Directors, and has been well received by Topeka physicians where they were actually used for two months before any evaluation was attempted.

Before these new forms are put into use on a state-wide basis this fall, all Blue Shield Participating Physicians will be completely oriented to them.

- A copy of the new form will be mailed to each physician, along with a letter explaining the new procedures.
- With the initial mailing of a supply adequate for several months, will go a complete guide for their use. This guide will come to the doctor in the form of pages to be inserted in the Blue Shield Manual.

It is important to note that this new Service Statement form will be used in standard cases only and will not eliminate the forms for "individual consideration" and "intensive medical care" cases.

One-Check Payment for Clinics

The second time-saving step which is being installed in Blue Shield procedures, is a new system for mailing one-check payments to clinics and partnership offices, if the physician or business manager involved agree.

In the past, a check was mailed for each individual doctor, accompanied by a remittance advice (or explanation of payment).

The new process will result in one single check and single remittance advice covering the service of all physicians in the single office or group. The change is optional and will be made only in situations where the business office or the physicians agree that it will be satisfactory for their office. The plan was presented at the Clinic Managers' meeting in May and met with general approval at that time. In addition to being a less expensive operation for Blue Shield, it will be

an aid to personnel in the business offices in that it will necessitate checking files only one time, rather than each time they receive a check.

Change in Personnel

Announcement was made last month by the Kansas Blue Shield staff of the appointment of Herman Skelton to the position of Assistant Director of Physician Relations, succeeding Jim Parmiter who resigned his position to go into business in Holton.

Mr. Skelton had been a representative in the Physician Relations Department for the past year. Announcement of the change was made by Proctor Redd, Director of Hospital-Physician Relations.

One in Three

One family in every three has a yearly hospital bill. Assume the man who does not believe in prepaid health care goes for three years before requiring hospital or medical care. At the end of these three years he would have saved $266.40 for hospital bills and $133.20 for doctor bills.

His savings for three years would not even cover an uncomplicated operation for removal of gall bladder. The $266.40 might see him through an average hospital stay; but $133.20 would never cover the doctor's bills. The surgical fee for removal of the gall bladder averages $215.00. There would be the anesthetist's fee and the cost of x-rays at least in addition.

Piggy banks are fine—but where illness and injury are concerned no one knows what amount is the correct amount to cover the cost of needed care.

Or, more important, *what if hospital care is necessary before savings have accumulated?*

More than $664,000,000 was paid to physicians in 1959 by the 73 Blue Shield Plans located in North America, the National Association of Blue Shield Plans reported today.

"The payment of $664,301,706 to the medical profession for care rendered Blue Shield members represented an all-time high for a one-year period, and also represented nearly 90 per cent of the total 1959 income of these medical-surgical Plans," John W. Castellucci, executive vice president of the national association reported. Meanwhile, the Plans spent less than 10 per cent of their total income last year for administrative expenses.

The national association reported that payments to physicians over the past decade had increased from nearly $116,000,000 in 1950 to the 1959 figure of $664,301,706.

For the same comparable period, administrative expenses dropped from 13 per cent of total income in 1950 to last year's figure of less than 10 per cent.

"Blue Shield's important contribution to the health care economy of North America is evidenced by its growing role over the past decade in helping millions of its members pay for needed medical and surgical care," Castellucci said. "And not to be overlooked," he added, "is the fact that despite the effects of inflation and the increased cost of doing business, Blue Shield Plans have performed another service to their members and the medical profession by annually expanding a smaller portion of their income dollar to administrative expenses."

Student Thesis

(Continued from page 446)

of red blood cells depositing large amounts of bilirubin into the blood stream and causing large amounts of uric acid to be produced in the metabolic process of breaking down the protein.

Because of the relatively high incidence of abnormal hemoglobins in areas where malaria is prevalent, some individuals surmised that perhaps the S or other abnormal hemoglobins had an increased survival advantage over normal hemoglobin and early studies seemed to indicate that this was true. Liachowitz made a study in Surinam, Africa on 343 negroes which included determination of the incidence of malaria and hemoglobin type. He reported the following incidence of malaria parasites in the various types of hemoglobin.

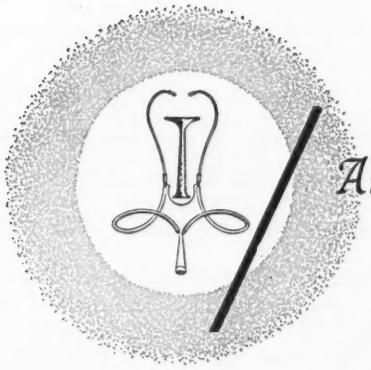
AA	19%
AS	23%
SS	25%
AC	22%

The differences between the incidences among the different groups was not felt to be statistically significant.

A more extensive study was made by Edington on 1255 negroes of Northern Ghana to determine the relationship between hemoglobins S and C and malaria or any other disease prevalent in the area. He broke the data into age groups for each hemoglobin type and concluded that there was no difference in the incidence of malaria in the individuals with abnormal hemoglobins. He also stated that S and C hemoglobins are highly unlikely to protect against pyogenic, pneumococcal disease, schistosomiasis, or tuberculosis.

Many of the abnormal hemoglobins discussed in this paper cause no symptoms and are only found by surveys. Some are found as the result of electrophoresis carried on in the presence of anemia. Mostly they are of academic interest only but may be useful in determining the nature of other diseases which are inherited from a locus close to that of the hemoglobin locus. One possible exception to this is the S hemoglobin which causes symptoms and is common enough that it is seen by most physicians.

Editor's Note: References may be obtained by writing the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 315 W. 4th Street, Topeka, Kansas.



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the* Doctor's Calendar. *Notice of the session is posted in advance to allow the physician time to make preparations.

Improvement in the total care of surgical patients will be the goal of 10,000 doctors expected to attend the 46th annual Clinical Congress of the American College of Surgeons in San Francisco, California, October 10 through 14.

Doctors from all parts of the nation and many foreign countries will attend sessions at this largest meeting of surgeons. More than 1,000 participants will take part in the various programs as authors of research reports, teachers of postgraduate courses, participants in panel discussions, lecturers, and operating surgeons in motion pictures and closed-circuit telecasts.

Dr. Leon Goldman, professor and chairman, Department of Surgery, University of California School of Medicine, Berkeley-San Francisco, is chairman of the local committee on arrangements.

Major addresses will be made by Dr. I. S. Ravdin, Philadelphia, chairman, Board of Regents, and incoming president of the College; Dr. Joseph Trueta, Oxford, England, will speak on trauma and the living cell; Dr. Wendell M. Stanley, director of the virus laboratory at University of California, Berkeley, and Nobel winner in chemistry, will deliver the Martin Memorial Lecture, named for the College founder, Franklin H. Martin, on the subject of virus-cancer relationships; Mr. Leslie Philip Le Quesne, London, England, will give the annual Baxter Lecture, speaking on body fluid disturbances resulting from stomach obstruction.

Urology Award—The American Urological Association offers an annual award of $1,000 (first prize of $500, second prize $300, and third prize $200) for essays on the result of some clinical or laboratory research in Urology. Competition is limited to Urologists who have been graduated not more than ten years, and to hospital internes and residents doing research work in Urology.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Hotel Biltmore, Los Angeles, California, May 22-25, 1961.

For full particulars write the Executive Secretary, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be in his hands before December 1, 1960.

Effective June 15, 1960, the Federal Aviation Agency will require that student and private pilots be given their medical examinations by designated medical examiners. This rule reinstates a practice which was in effect from 1926 until 1945.

In announcing the reestablishment of this practice, Dr. James L. Goddard, the Civil Air Surgeon, has emphasized his previous statements that any physician may be considered eligible for designation as an examiner.

In order to have a better understanding of the proposed rule, I wish to point out that it is designed to accomplish the following needed improvements in the administration of the Agency's medical certification program.

1. To maintain a group of medical examiners who are clearly responsive to the needs of public safety in the performance of examinations and the issuance of medical certificates to airmen.

2. To permit the administration of training programs to maintain the quality of performance of medical examiners and to permit the dissemination of special instructions pertaining to the needs of civil aviation.

3. To bring into the program those physicians who have the professional qualifications and a demonstrated interest in the medical certification field.

4. This would permit the designation of any

qualified physician who, by his application, has demonstrated interest in the program.

Those physicians in localities where flying activities are conducted may wish to consider filing an application for designation by writing to the Civil Air Surgeon, Federal Aviation Agency, Washington 25, D. C.

Designation as an aviation medical examiner will qualify the designee to examine both Class II (commercial) and Class III (student and private) airmen, including control tower operators. Instructions concerning the required procedures, standards, and equipment will be supplied to those who apply.

Since commercial and airline transport pilots have always been required to obtain examinations from specifically selected physicians, there are presently some 2,000 aviation medical examiners previously designated and located throughout the country. Expanding aviation activities will result in a continuing need for additional examiners. There are at present some 400,000 active civil airmen of whom approximately 240,000 are examined each year.

For your Medical Meeting Timetables 1961
Meetings of the American College of Surgeons:

January

Sectional Meeting. Hotel Dinkler-Tutwiler, *Birmingham, Alabama, January 16, 17, 18.* Dr. Arthur I. Chenowith, Birmingham, Local Chairman.

Sectional Meeting. Hotels Del Prado, Reforma, Vista Hermosa, El Presidente, Alffer, Continental Hilton, *Mexico City, Mexico, January 23, 24, 25, 26.* Dr. Gustavo Baz Prada, Honorary Chairman; Dr. Eduardo Castro, Chairman; Dr. Francisco Valdes la Vallina, Co-Chairman; Dr. Lorenzo Fuentes Ogarrio, Secretary.

NOTE: Descriptive literature about this meeting, with hotel and transportation facilities, pre-and-post meeting tours, and advance registration forms are available from the College headquarters.

March

Four-Day Sectional Meeting for Surgeons and Graduate Nurses. Hotels Bellevue-Stratford, Ben Franklin, and Sylvania, *Philadelphia, Pennsylvania, March 6, 7, 8, 9.* Dr. Jonathan E. Rhoads, Philadelphia, Local Chairman for Surgeons Meeting. Miss Iris Ann Machlan, R.N., and Miss Mary Rieser, R.N., Philadelphia, Co-Chairmen for Nurses Meeting.

April

Sectional Meeting. The Fort Garry Hotel, *Winnipeg, Manitoba. April 6, 7, 8.* Dr. Kenneth R. Trueman, Winnipeg, Local Chairman.

NOTE: All Sectional Meetings are under the general supervision of Dr. H. Prather Saunders, Associate Director, American College of Surgeons. FOR ALL INFORMATION, write to: Dr. William E. Adams, Secretary, American College of Surgeons, 40 East Erie Street, Chicago 11, Illinois.

Skin Specialist Warns Suntan Enthusiasts

A Chicago dermatologist said recently that many people work hard to convert "a peaches-and-cream complexion" into "the sun-battered skin of a desert rat."

Writing in the June issue of *GP* magazine, published monthly by the American Academy of General Practice, Dr. William Becker, Jr., adds that plain vanishing cream, containing 10 per cent para-aminobenzoic acid, "affords 30 times more protection" than many commercial products. Dr. Becker is clinical assistant professor of dermatology at the University of Illinois.

"Few people are aware," Dr. Becker points out, "that after a single, moderately-severe sunburn the blood vessels are abnormal for four to 15 months."

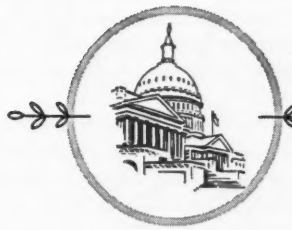
Although over-exposure ages the skin and can cause cancer, sunlight does have beneficial effects, Dr. Becker explains. For example, it produces vitamin D in the skin and causes an unexplained drop in blood pressure and serum cholesterol. At the same time, it causes the skin to become dry and lose its elasticity. The color darkens and often becomes yellowish or blotchy brown. Prolonged over-exposure causes a condition known as "farmers" or "sailors" skin.

Historically, a deep tan has always had social significance:

"Older cultures regarded tanning and weathering of the skin by sunlight as stigmata of the lower classes. The pale translucent complexion was most desired. This identified a personage as above laboring in the fields. The industrial revolution moved the lower classes indoors. Increasing leisure has altered the attitude toward outside activity. Many segments of current American society endow a deep tan, especially out of season, with an aura of virility, leisure and wealth. The last two decades have seen Americans indulge in historically unique sun worship—ancient peoples offered sacrifices other than themselves," Dr. Becker said.

The author points out that benzophenones, chemicals now being added to plastics, paints, varnishes, etc., may someday help prevent sunburns and skin damage, adding that although experimental work is in progress, no such commercial preparations are available today.

"We must accept the fact that the white skin is not physiologically able to tolerate a large amount of strong ultraviolet light. . . . No simple, absolutely foolproof method of preventing sunburn is known," Dr. Becker concludes.



Washington HIGHLIGHTS

This summary of Washington news is prepared by the A.M.A. Washington Office for distribution to state medical journals.

Congress returned to work this month to take up its unfinished business, including the controversial issue of health care for the aged, an atmosphere dominated by election-year politics.

The three or four week, tag-end session of Congress loomed as one of the most important meetings in the past decade as far as possible impact on the medical profession is concerned.

The lawmakers are slated to decide whether to embark the Federal government on a course that could threaten the private practice of medicine, or to adopt a voluntary program that would pose no such danger.

The omnibus social security bill approved by the House Ways and Means Committee was easily cleared by the House, 381 to 23, and sent to the Senate Finance Committee, which held two days of hearings. The measure contained a voluntary, Federal-State program for assisting needy aged persons meet their health care costs. Both the Administration and the American Medical Association endorsed the House measure as in keeping with the concept of giving the states prime responsibility for helping their citizens, for aiding those who are most in need of help, and for avoiding the compulsory aspects of health plans involving the social security mechanism.

A vote by the Finance Committee, headed by Sen. Harry F. Byrd (D., Va.), was scheduled shortly after the Senate resumed operations in August. Whatever action the Committee took, however, proponents of schemes such as the Forand bill to provide a compulsory, federal medical program promised a determined fight on the floor of the Senate.

Ike Against Forand-Type Legislation

In the event Congress should approve a government medicine plan, opponents were counting on a Presidential veto to kill the measure. The Chief Executive repeatedly has asserted in strong language his all-out opposition to any compulsory plan for health care financing.

At the Senate Finance Committee hearing, Arthur S. Flemming, Secretary of Health, Education and Welfare, renewed the Administration's flat stand against the social security avenue to financing health costs. Such a plan, he said, would inevitably lead to pressures for expanding the benefits and lowering or eliminating the age requirement. Under such circumstances, a 15 per cent or 20 per cent social security payroll tax would not be too far off, he said. "We believe it is unsound to assume that revenue possibilities from a payroll tax are limitless."

Dr. Leonard W. Larson, President-elect of the American Medical Association, told the Committee the House bill is the "antithesis of the centralized, socialized, statist approach of the proposals advocating national compulsory health insurance.

"To those critics who call this program modest, we say that fiscal irresponsibility, unpredictable cost and maximum nationalization are not the accepted criteria for good legislation," he testified.

A spokesman for the insurance industry pointed out "giant strides" made by private health insurance in recent years in covering aged persons. E. J. Faulkner declared that one of the most prevalent and erroneous assumptions on the matter is that most of the aged aren't able to contribute to financing their own health care costs.

The Social Security health bills, he said, "would impair or destroy the private practice of medicine, would add immeasurably to our already crushing tax burden, would aggravate our severe public fiscal problems, and would entail other undesirable consequences."

Labor Still Pushing

In other testimony, the AFL-CIO again urged enactment of a Social Security health bill; the American Osteopathic Association and the International Chiropractors Association urged that health benefits included in any bill include the services of osteopaths and chiropractors, respectively.

On another legislative proposal of interest to the medical profession—the Keogh-Simpson bill—a Senate debate was scheduled this month. Sen. Gordon Allott (R., Colo.) said in a Senate speech that "I believe that this legislation will have the overwhelming support of this body."

The bill, which would encourage retirement savings by the self-employed such as lawyers, small

businessmen and physicians, has already been approved by the House. The Senate bill, voted by the Senate Finance Committee, would require participating self-employed to establish retirement plans for their employes.

How Safe Is Your Car?

No matter how good your brakes are, they can't stop your car.

The thought that brakes do stop a car is one of the many misunderstandings causing mounting highway accidents.

Actually, even the finest brakes can do no more than stop your wheels from spinning. It's up to your tires to stop the car.

Sound obvious? Then answer this question: Right now, what is the condition of the cord inside your tires? Are the strands firm and unbroken—or rotted and weak?

Here's another question which sounds obvious, but which few motorists can answer: Do your headlights work? Don't answer "yes" just because both lights turn on and off. Almost worse than no light at all is one that glares too much in the eyes of a driver of an approaching automobile.

Faulty tires and lights are just two of the many common causes of highway accidents, and mechanical defects are far more common than most people realize. A typical motorist might guess that only five or 10 per cent of all cars on the road are in faulty condition, but the State of Texas recently found, after an official inspection of four million vehicles, that 43 per cent were unsafe for today's traffic conditions.

Do mechanical defects and tires really amount to much when it comes to safety? Pennsylvania Turnpike officials proved that they do. Starting in 1957, officials urged toll booth attendants to bar cars with badly worn tires. To date, 12,000 drivers have been told to get better tires or keep off the Turnpike.

Result: Deaths from accidents traceable to poor tires have dropped from 26 per cent of all fatal accidents to less than five per cent.

Even the five per cent might have been eliminated had toll booth attendants been able to look inside the tires at the cord, for although nylon tire cord is not damaged by water and moisture penetrating into cuts and bruises, tires made with other fibers are easily affected if the rubber coating is cut, making them liable to dangerous failures. So when checking for air pressure at the service station, check for cuts too.

As another precaution, no matter what the driving conditions or the distances to be covered are, seat belts are important safety equipment and should be worn at all times.

Two thirds of fatal accidents occur within 25 miles of the victims' homes. Every crash is a "somebody's neighborhood" accident.

Safety belts keep car occupants from being thrown against windshield and dashboard. They absorb the momentum of forward thrust caused by sudden stops. They keep passengers within the car in case of accident. Safety belts, therefore, should be chosen with the same care as tires.

The National Safety Council recommends that you insist on a belt which meets the standards set forth by the Society of Automotive Engineers. Many manufacturers are using fibers such as nylon to measure up to these requirements which cover matters such as breaking strength and resistance to corrosion. Ease of releasing the buckle is another important factor.

A section of the rubber casing of this tire has been stripped away to reveal the tire cord which supplies the "muscle" that resists the crushing weight and impacts of driving. Drivers checking air pressure at the service station should check also for cuts as well as worn treads for cords other than nylon may deteriorate with moisture and dangerously weaken the tire.

A Cornell University study has revealed that only 2.6 per cent of people within automobiles, compared with 12.8 per cent thrown through open car doors, are fatally injured in accidents. Safety studies also reveal that people with seat belts are 35 to 60 per cent safer than those without them.

Belts guard your energy as well as your safety. On long trips, safety belts reduce fatigue by reducing the strain of staying in place on normal stops and turns. When properly adjusted, seat belts fit comfortably but snugly to make this possible.

KMS Obituaries

HENRY S. DREHER, SR., M.D.

Dr. Harry S. Dreher, Sr., 66, prominent Salina physician, died July 12 in St. Luke's Hospital, Denver, Colo., where he had been a patient three weeks.

Death was attributed to complications following major surgery.

Dr. Dreher came to Salina from Luray in 1945 to become associated with the Mowery Clinic. Later, two sons joined him in practice in the clinic. Dr. Henry S. Dreher, Jr., came in 1947, and Dr. Richard L. Dreher, in 1952. Another son, Warren Dell, lives in Denver.

Dr. Dreher was born Sept. 14, 1893, in La Cygne, Kansas. He was graduated from the Oklahoma University School of Medicine in 1915 and from 1917 to 1919 served in the U. S. Army Medical Corps. He practiced medicine in Luray from 1919 to 1945 when he came to Salina.

Dr. Dreher was prominent in many activities of the medical profession.

He was a member of the Saline County Medical Society, Golden Belt Medical Society, and the American Academy of General Practice. He was a past president of the Saline County Medical Society.

He had served on the Membership and Ethics committee and the Committee of Education of the Kansas Chapter of the American Academy of General Practice.

Dr. Dreher was a member of the board of directors of the Kansas Blue Shield for three years.

Surviving besides the three sons are the widow, Eva, and two brothers of Detroit, Michigan, five sisters, and ten grandchildren.

EDWARD HENRY ATKIN, M.D.

Dr. Edward Henry Atkin, 74, a physician and surgeon at Hoisington, Kansas, for 52 years, died June 23 in a Wichita hospital.

Dr. Atkin was born in Moreland, Kansas. He was a graduate of the University of Louisville, Ky., where he studied medicine.

His survivors include a daughter, Mrs. Kathryn Robison, Hoisington; three sisters, and two grandchildren.

Dr. Atkin owned and operated the Atkin Hospital in Hoisington for many years. His hospital was in operation until the present hospital was opened. He was a member of the Missouri Pacific medical staff in Hoisington for 35 years. He served the City of Hoisington as city commissioner and also as mayor in earlier years. He also served in the medical corps in World War I—serving in France and Germany for three years.

He was a member of the Episcopal church, International College of Surgeons, and the Barton County Medical Society.

WILLIAM T. WILKENING, M.D.

Dr. William T. Wilkening, a Fort Scott physician since 1919, died June 27 at Mercy Hospital, where he had been a patient since March 20.

Dr. Wilkening, 74, came to Fort Scott from St. Louis after graduating from Washington University Medical School. He began a practice with Dr. Robert Aikman in the Fort Scott Drug Building, May 20, 1919. In 1925, he moved to the present location in the Stout Building.

Born Oct. 8, 1885, at Oak Ridge, Mo., he was the son of William and Louisa Grebe Wilkening. He was married at St. Louis April 15, 1920, to Bethune McKown, who survives.

Other survivors include a daughter, Mrs. Vernon C. Bailey, Hartsdale, N. Y.; two brothers; two sisters; and three grandchildren.

Dr. Wilkening was a member of the American College of Surgeons, the Bourbon County Medical Assn., and was a staff member at Mercy Hospital.

FRANK X. LENSKI, M.D.

Dr. Frank X. Lenski, 64, widely known Iola surgeon and Democratic leader, died in his office June 18, which was his birthday. Death was attributed to heart disease.

In addition to his extensive medical practice, he was interested in an implement business and owned several farms in the community.

Dr. Lenski was born at Pittsburg, attended the Pittsburg schools and state college. He graduated from the University of Kansas before taking his medical degree in 1922 from Northwestern University. During World War I he was a member of the R.O.T.C.

He began practicing medicine and surgery in Iola in 1923.

Long interested in politics, Dr. Lenski had been chairman of the Allen County Democratic committee for a number of years and attended the past two national conventions of the party.

He was a member of the advisory board of Norton State Hospital. He also belonged to St. John's Catholic Church, the Knights of Columbus, and the Elks Lodge.

Dr. Lenski is survived by his wife of the home; two sons, Dr. Frank X. Lenski, Jr., Iola, and John J. Lenski, Des Moines, Ia.; three daughters, Miss Marlene Lenski, Iola; Mrs. Thomas Reidy, St. Louis; Dr. Marita Scimeca, Atchison; a brother and sister and 10 grandchildren.

Personalities—IN KANSAS MEDICINE

Dr. Prescott Thompson, Topeka, attended the 17th annual meeting of the American Geriatrics Society in Miami Beach June 9-10. He also participated in a seminar on Housing and Living Arrangements for the Later Years at Lake Mohonk, N. Y., June 13-18.

"The Nature of the Gifted and the Reluctant Learner" was the title of the talk given by **Dr. J. Cotter Hirschberg,** Topeka, at Washburn University's workshop on mental health in June.

Dr. J. H. A. Peck, who has practiced medicine in the St. Francis area for 39 years, was honored at his birthday anniversary party in the city park here. Hundreds attended.

During his tenure, Dr. Peck has delivered 2,469 babies or more than half the present Cheyenne County population. He has performed 4,822 operations. He has served as president of the Society and each year is parade chairman for the Cheyenne County fair.

Drs. Robert Woods and **Joseph Stein,** Topeka, attended the meeting of the American Neurological Association in Boston in June. Doctor Stein stayed for a meeting of the American EEG Society in West Horwich, Mass.

Fifty years ago **Dr. H. L. Galloway,** graduated from medical school. He took his Internship at Mercy Hospital previous to doctoring in Anthony on September 1, 1911. (49 years in Anthony this fall.)

In 1929 the Galloway Hospital in Anthony was established and Dr. Galloway is still Chief of Staff.

On September 1, 1914 Dr. Galloway came to the calling of the Hardtner community to associate at the Achenbach Memorial Hospital.

Dr. C. H. Munger, director of the Lyon County Health Department for 28 years, informed the county commissioners he intends to retire October 1.

Dr. Howard Wagenblast, director of the Salina-Saline County health department, has resigned, effective August 31.

Dr. Wagenblast submitted his resignation at a meeting of the health department board of directors. His offer to remain in the office on a part-time basis for a time beyond August 31 was accepted by the board. He is planning to go into private practice.

NEW MEMBERS

The JOURNAL *takes this opportunity to welcome these new members into the Kansas Medical Society.*

Calvin H. Agnew, M.D.
K. U. Medical Center
39th & Rainbow Blvd.
Kansas City 12, Kansas

Julius W. Bell, M.D.
Professional Building
Abilene, Kansas

James A. Bertone, M.D.
605½ N. Broadway
Pittsburg, Kansas

Marvin I. Dunn, M.D.
K. U. Medical Center
39th & Rainbow Blvd.
Kansas City 12, Kansas

Beverly J. Endres-Burdette, M.D.
5609 Birch
Mission, Kansas

Robert B. Hodgson, M.D.
4100 W. 72nd Terrace
Prairie Village, Kansas

William E. Evans, Jr., M.D.
8215 Metcalf
Overland Park, Kansas

Marietta Houston, M.D.
Menninger Foundation
Topeka, Kansas

Otto D. Klassen, M.D.
3420 E. Douglas
Wichita 8, Kansas

Donald W. Selzer, M.D.
112 Medical Arts Building
10th & Horne
Topeka, Kansas

Archibald O. Tetzlaff, M.D.
4821 Booth
Kansas City 3, Kansas

Book REVIEWS

CHRISTOPHER'S TEXTBOOK OF SURGERY. Edited by Loyal Davis, M.D., 7th Edition. 1551 pages, 1597 illustrations. $17.00. Philadelphia and London. W. B. Saunders Co., 1960.

The Seventh Edition of Christopher's Textbook of Surgery, edited by Loyal Davis, M.D., as in previous editions, is comprised of chapters contributed by various authorities in general surgery and related surgical specialties including anesthesiology, orthopedics, urology, neurosurgery, gynecology, thoracic surgery, and others. In addition to complete coverage of the pathogenesis, recognition, incidence and management of disease entities of surgical importance, parts of the book are devoted to the history of surgery, qualifications of the surgeon, and an excellent new chapter on surgical judgement is appended. This new edition incorporates recent surgical advances, some chapters having been rewritten by new contributors.

Because of its completeness, the book should be of value to all students of surgery and is so written as to be interesting and informative to the practicing surgeon as well as to the medical student. It should be useful to the resident in surgery as a review in preparation for examinations. A source for further study is provided in the bibliography supplied at the end of each chapter. The book reads easily and is liberally and appropriately illustrated—*D.R M.*

YOUR HEART. A handbook for laymen. H. M. Marvin, M.D., Doubleday and Co., New York, price $4.50, 335 pages, 1960, illustrated.

Your Heart, a handbook for the layman, written by Dr. H. M. Marvin, is a book that I would recommend to be used to help educate the patient who has had a scare from the words "heart trouble." This book will save a doctor a good deal of time in explaining to the patient the intricacies, general background, and the anatomy of this organ. It is written, of course, by a man who has dealt with lay persons through the American Heart Association and it is presented well for a person who is not familiar with professional terms. The book is a good source of quick reference for the physician in order to help him describe the heart in more lay terms.

The text has a considerable number of illustrations and diagrams which show the inside and working parts of the heart. It discusses some of the care that should be used by the patient that has been informed of a heart condition. This book will be easily read by the majority of patients and will be informative.—*F.D.W.*

TEXTBOOK OF PEDIATRICS. 7th Edition. Waldo E. Nelson, M.D., W. B. Saunders Co., Philadelphia, 1959, price $16.50, 1462 pages.

This new 7th edition of Nelson's *Textbook of Pediatrics*—remains an excellent pediatric textbook. It certainly covers, in its 1400 odd pages, the most up-to-date concepts in practices of pediatrics. It is useful both to the Pediatrician and to the general practitioner, as a reference text, and also covers the entire aspect of child care; from the pre-natal period through adolescence.

There are revisions, and additions—especially in the sections on the "Newborn Infant"—"Diseases of Metabolism" with especially good sections on the amino-acid metabolism and congenital diseases arising therefrom.

The section on parenteral fluid therapy has been re-written, as well as the respiratory tract, the nervous system and the cerebral palsy section. Emotional problems are handled in an improved fashion in this text, and several new additions have been added, including tropical eosinophilia, and cirrhosis of the liver.

With the constant changes in viral infections, the section on infectious disease has been brought up to date.

It is the reviewer's opinion that any physician who treats children will find this text useful in his practice, with the answers to everyday problems effecting children.—*W.H.C.*

The Kansas Medical Society—1960-1961

OFFICERS

President	Frederick E. Wrightman, Sabetha
President-Elect	Harold M. Glover, Newton
Immediate Past President	Glenn R. Peters, Kansas City
First Vice-President	Norton L. Francis, Wichita
Second Vice-President	H. St. Clair O'Donnell, Ellsworth
Secretary	George E. Burket, Jr., Kingman
Treasurer	John L. Lattimore, Topeka
A.M.A. Delegate, 1960-1962	George F. Gsell, Wichita
A.M.A. Alternate, 1960-1962	H. St. Clair O'Donnell, Ellsworth
A.M.A. Delegate, 1961-1963	Lucien R. Pyle, Topeka
A.M.A. Alternate, 1961-1963	Glenn R. Peters, Kansas City
Chairman of Editorial Board	Orville R. Clark, Topeka

COUNCILORS

District 1	Emerson D. Yoder, Denton
District 2	J. W. Manley, Kansas City
District 3	George R. Maser, Mission
District 4	Dick B. McKee, Pittsburg
District 5	Ralph G. Ball, Manhattan
District 6	James A. McClure, Topeka
District 7	J. L. Morgan, Emporia
District 8	J. Gordon Claypool, Howard
District 9	John C. Mitchell, Salina
District 10	John N. Blank, Hutchinson
District 11	William J. Reals, Wichita
District 12	Albert C. Hatcher, Wellington
District 13	H. St. Clair O'Donnell, Ellsworth
District 14	Clair J. Cavanaugh, Great Bend
District 15	Lyle G. Glenn, Protection
District 16	Edward F. Steichen, Lenora
District 17	John O. Austin, Garden City

OFFICERS OF COMPONENT SOCIETIES—1960

Society	*President*	*Secretary*
Allen	A. R. Chambers, Iola	L. D. Robinson, Iola
Anderson	T. M. Dougherty, Garnett	Claib B. Harris, Jr., Garnett
Atchison	Edwin T. Wulff, Atchison	L. E. Harrington, Atchison
Barton	Anol Beahm, Great Bend	Robert Unrein, Hoisington
Bourbon	Pratt Irby, Fort Scott	Guy I. Akers, Fort Scott
Brown	James Scanlon, Horton	R. T. Nichols, Hiawatha
Butler	Ray F. Lowry, El Dorado	Kenneth B. Dellett, El Dorado
Central Kansas	Joseph Seitz, Ellsworth	Eugene T. Siler, Hays
Chase		
Chautauqua	Ivan E. Lloyd, Sedan	William K. Walker, Sedan
Cherokee	F. H. Jones, Columbus	H. L. Bogan, Baxter Springs
Clay	S. A. Anderson, Clay Center	Forrest D. Taylor, Clay Center
Cloud	M. C. Pearson, Concordia	F. P. Thornton, Jr., Concordia
Coffey	A. B. McConnell, Burlington	Henry J. Dick, Jr., Burlington
Cowley	G. L. Norris, Winfield	Edgar D. Hinshaw, Arkansas City
Crawford	R. W. Friggeri, Girard	Howard R. Elliott, Pittsburg
Dickinson	Fred Dozier, Herington	Roger D. Warren, Enterprise
Doniphan	Emerson D. Yoder, Denton	Robert L. Corder, Highland
Douglas	Howard L. Wilcox, Lawrence	James S. Reed, Lawrence
Edwards	M. Dale Atwood, Kinsley	F. G. Meckfessel, Lewis
Finney	J. W. Turner, Garden City	H. M. Wiley, Garden City
Ford	E. W. Schwartz, Dodge City	R. E. Speirs, Dodge City
Franklin	Louis N. Speer, Ottawa	David G. Laury, Ottawa
Geary	C. V. Minnick, Junction City	H. L. Bunker, Jr., Junction City
Greenwood	John H. Basham, Eureka	Robert L. Obourn, Eureka
Harvey	Frances A. Allen, Newton	Lee S. Fent, Newton
Iroquois	Ronald McCoy, Coldwater	Charles G. Stephens, Minneola
Jackson	E. C. Moser, Holton	M. Ross Moser, Holton
Jefferson	W. A. R. Madison, Nortonville	C. D. Townes, Perry
Jewell	C. S. Hershner, Esbon	R. M. Owensby, Mankato
Johnson	A. S. Reece, Gardner	R. E. Delphia, Olathe
Labette	V. L. Jackson, Altamont	J. D. Pace, Parsons
Leavenworth	Kenneth Powell, Leavenworth	J. M. Graham, Leavenworth
Lyon	K. L. Lohmeyer, Emporia	C. H. Munger, Emporia
McPherson	Weir Pierson, McPherson	W. J. Collier, McPherson
Marion	A. C. Eitzen, Hillsboro	R. L. Krause, Goessel
Marshall	J. W. Randell, Marysville	D. M. Diefendorf, Waterville
Miami	Rex Stanley, Paola	James Fowler, Osawatomie
Mitchell	H. B. Vallette, Beloit	J. F. Nienstedt, Beloit
Montgomery	William T. Read, Coffeyville	Albert E. Martin, Jr., Coffeyville
Morris	Robert W. Blackburn, Council Grove	James E. Schultz, Council Grove
Nemaha	V. E. Brown, Sabetha	Cecil C. Hunnicutt, Sabetha
Neosho	Reuben J. Burkman, Chanute	Donald E. Ray, Chanute
Northwest Kansas	Floyd L. Smith, Colby	Wayne G. Parker, Hoxie
Osage	Niles M. Stout, Lyndon	J. L. Ruble, Jr., Overbrook
Osborne	J. E. Hodgson, Downs	J. E. Henshall, Osborne
Pawnee	O. R. Cram, Larned	H. L. Patterson, Larned
Pottawatomie		Fred E. Brown, St. Marys
Pratt-Kingman	F. G. Freeman, Pratt	J. W. Jacks, Pratt
Reno	V. R. Moorman, Hutchinson	Tom W. Stivers, Hutchinson
Republic	P. L. Beiderwell, Belleville	H. D. Doubek, Belleville
Rice	David H. Rau, Lyons	P. E. Beauchamp, Sterling
Riley	Kenneth M. Boese, Manhattan	George S. Bascom, Manhattan
Rush-Ness	F. K. Bowser, La Crosse	R. E. Grene, La Crosse
Saline	Henry S. Dreher, Salina	Frederick A. Gans, Salina
Sedgwick	Clyde W. Miller, Wichita	Paul A. Kaelson, Jr., Wichita
Seward	Otto F. Prochazka, Liberal	Harold Dittemore, Liberal
Shawnee	W. O. Martin, Topeka	Richard Beach, Topeka
Smith	D. A. Hardman, Smith Center	V. E. Watts, Smith Center
South Central Tri-County	P. M. Hulett, Anthony	M. D. Christensen, Kiowa
Stafford	O. W. Longwood, Stafford	C. Everett Brown, Stafford
Washington		L. L. Huntley, Washington
Wilson	Raymond J. Beal, Fredonia	C. E. Stevenson, Neodesha
Woodson	A. C. Dingus, Yates Center	H. A. West, Yates Center
Wyandotte	Wray Enders, Kansas City	William W. Abrams, Kansas City

WHY *ALDACTONE*®
IN EDEMA

Because it acts by regulating a basic physiologic imbalance, Aldactone possesses multiple therapeutic advantages in treating edema.

Aldactone inactivates a crucial mechanism producing and maintaining edema — the effect of excessive activity of the potent salt-retaining hormone, aldosterone. This corrective action produces a satisfactory relief of edema even in conditions wholly or partially refractory to other drugs.

Also, Aldactone acts in a different manner and at a different site in the renal tubules than other drugs. This difference in action permits a true synergism with mercurial and thiazide diuretics, supplementing and potentiating their beneficial effects.

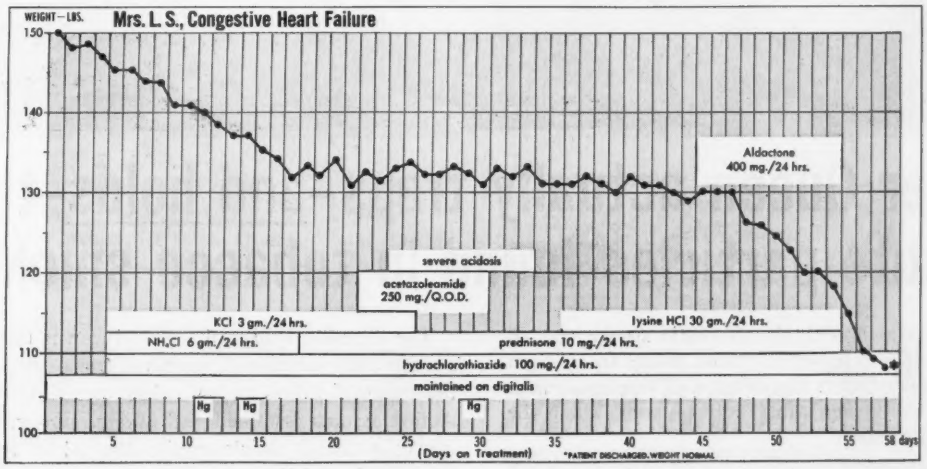
Further, Aldactone minimizes the electrolyte upheaval often caused by mercurial and thiazide compounds.

The accompanying graph shows a dramatic but by no means unusual instance of the effect of Aldactone in refractory edema.

The usual adult dosage of Aldactone, brand of spironolactone, is 400 mg. daily. Complete dosage information is contained in Searle New Product Brochure No. 52.

SUPPLIED: Aldactone is supplied as compression-coated yellow tablets of 100 mg.

G. D. SEARLE & CO., Chicago 80, Illinois.
Research in the Service of Medicine.



Filter Queen actually traps–and holds–the minute particles found in tobacco smoke!

Filter Queen proves it with the dramatic smoke test. A Filter Queen vacuum cleaner is placed inside an air-tight clear, plastic dome which is then filled with smoke—smoke so dense the Filter Queen can barely be seen. Then, the Filter Queen is turned on.

In only four seconds all traces of smoke have completely vanished!

This is possible thanks to Filter Queen's remarkable patented Sanitary Filter Cone. Makes it ideal for hospital and home use where dust control is so vital. Air is exhausted in a circular pattern near the top of the unit, thus eliminating floor dust turbulence.

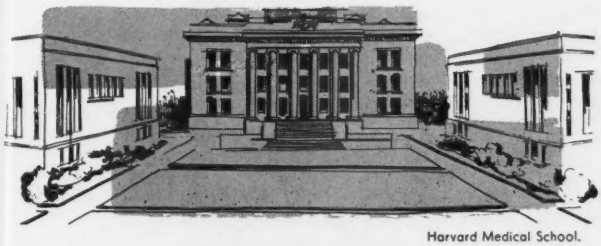
The cleaning ability of Filter Queen is unsurpassed. A permanently lubricated, precision-built one HP motor is the heart of Filter Queen's cleaning ability. Its Cyclonic Action assures sustained peak suction power. And according to a recent article in the Journal of the American Medical Association*, Filter Queen was described, without reservation, as the *quietest* of all vacuum cleaners tested. Another plus for hospital and home use.

Filter Queen sanitation system is built to last—to give years of dependable service even under extreme conditions. Each Filter Queen is unconditionally guaranteed by the

--pped !

manufacturer—your assurance of quality. That's another reason why so many hospitals now use Filter Queen.

We urge you to investigate Filter Queen. You'll find a distributor listed in the Yellow Pages.



Harvard Medical School.

Filter Queen Home Sanitation System is used by the Harvard Medical School, and in many other leading scientific and industrial institutions.

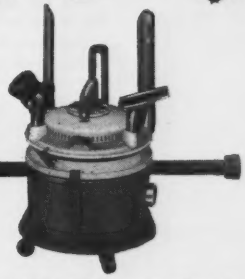
Today's Health

Guaranteed by Good Housekeeping

UL

FILTER QUEEN

HOME SANITATION SYSTEM



A PRODUCT OF HEALTH-MOR, INC., Chicago 1, Illinois

***Copies available from Professional Dept., Health-Mor, Inc., 203 N. Wabash Ave., Chicago 1, Illinois**

Squibb Announces Chemipen

Squibb Alpha-Phenoxyethyl Penicillin Potassium

new chemically improved penicillin which provides the highest blood levels that are obtainable with oral penicillin therapy

As a pioneer and leader in penicillin therapy for more than a decade, Squibb is pleased to make Chemipen, a new chemically improved oral penicillin, available for clinical use.

With Chemipen it becomes possible as well as convenient for the physician to achieve and maintain higher blood levels—with greater speed—than those produced with comparable therapeutic doses of potassium penicillin V. In fact, Chemipen is shown to have a 2:1 superiority in producing peak blood levels over potassium penicillin V.*

Extreme solubility may contribute to the higher blood levels that are so notable with Chemipen.* Equally notable is the remarkable resistance to acid decomposition (Chemipen is stable at 37°C. at pH 2 to pH 3), which in turn makes possible the convenience of oral treatment.

And the economy for your patients will be of particular interest—Chemipen costs no more than comparable penicillin V preparations.

Dosage: Doses of 125 mg. (200,000 u.) or 250 mg. (400,000 u.), t.i.d., depending on the severity of the infection. The usual precautions must be carefully observed with Chemipen, as with all penicillins. Detailed information is available on request from the Professional Service Department.

Supply: Chemipen Tablets of 125 mg. (200,000 u.) and 250 mg. (400,000 u.), bottles of 24 tablets. Chemipen Syrup (cherry-mint flavored, nonalcoholic), 125 mg. per 5 cc., 60 cc. bottles.

*Knudsen, E. T., and Rolinson, G. N.: Lancet 2:1105 (Dec. 19) 1959.

"CHEMIPEN" IS A SQUIBB TRADEMARK.

SQUIBB

Squibb Quality—the Priceless Ingredient

NEW

the physician-requested addition to the DONNAGEL family

DONNAGEL®-PG

Donnagel with paregoric equivalent

for better control of acute nonspecific diarrheas...

Robins

This pleasant-tasting combination of two outstanding antidiarrheals—DONNAGEL and paregoric—delivers more comprehensive relief with greater certainty in acute self-limiting diarrheas.

Each 30 cc. (1 fluidounce) of DONNAGEL-PG contains:

Powdered opium U.S.P.	*Kaolin*	*Pectin*	*Natural belladonna alkaloids*	*Phenobarbital*
.....24.0 mg. (equivalent to paregoric 6 ml.)	.....6.0 Gm.	.....142.8 mg.	hyoscyamine sulfate .....0.1037 mg. atropine sulfate .....0.0194 mg. hyoscine hydrobromide ....0.0065 mg.	(¼ gr.) ....16.2 mg.
Diminishes propulsive contractions and tenesmus; makes fecal matter less liquid	Adsorbent and demulcent action binds toxins and irritants; protects intestinal mucosa	Demulcent action complements effect of kaolin	Antispasmodic action reduces intestinal hypermotility; minimizes the risk of cramping	Mild sedative action lessens tension

Supplied: Banana flavored suspension in bottles of 6 fl. oz.

Also available: DONNAGEL® with NEOMYCIN – for control of bacterial diarrheas.

DONNAGEL®– the basic formula – when paregoric or an antibiotic is not required.

A. H. ROBINS CO., INC., Richmond 20, Virginia

Making today's medicines with integrity... seeking tomorrow's with persistence

NEOCHOLAN®

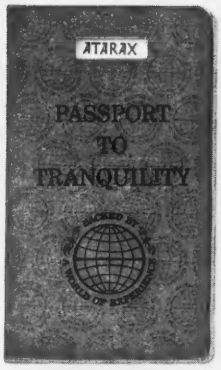
Your patient will often respond promptly to Neocholan therapy. It greatly increases the flow of thin, nonviscid bile and corrects biliary stasis by flushing the biliary system. It also relaxes intestinal spasm, resulting in an unimpeded flow of bile and pancreatic juice into the small intestine. Neocholan helps to promote proper digestion and absorption of nutrients. It also encourages normal peristalsis by restoring intestinal tone.

Each Neocholan tablet provides:
Dehydrochloric Acid Compound, P-M Co. 265 mg. (Dehydrochloric Acid, 250 mg.); Homatropine methylbromide 1.2 mg.; Phenobarbital 8.0 mg.
Supplied in bottles of 100 tablets.

PITMAN-MOORE COMPANY
DIVISION OF ALLIED LABORATORIES, INC.
INDIANAPOLIS, INDIANA

A GUIDE TO

THE REALMS OF THERAPY BEST ATTAINED WITH



ATARAX®

(brand of hydroxyzine)

World-wide record of effectiveness—over 200 laboratory and clinical papers from 14 countries.
Widest latitude of safety and flexibility—no serious adverse clinical reaction ever documented.
Chemically distinct among tranquilizers—not a phenothiazine or a meprobamate.
Added frontiers of usefulness—antihistaminic; mildly antiarrhythmic; does not stimulate gastric secretion.

Special Advantages	Supportive Clinical Observation	...and for additional evidence
IN CHILDREN unusually safe; tasty syrup, 10 mg. tablet	"... Atarax appeared to reduce anxiety and restlessness, improve sleep patterns and make the child more amenable to the development of new patterns of behavior...." Freedman, A. M.: Pediat. Clin. North America 5:573 (Aug.) 1958.	Bayart, J.: Acta paediat. belg. 10:164, 1956. Ayd, F. J., Jr.: California Med. 87:75 (Aug.) 1957. Nathan, L. A., and Andelman, M. B.: Illinois M. J. 112:171 (Oct.) 1957.
IN ELDERLY PATIENTS well tolerated by debilitated patients	"... seems to be the agent of choice in patients suffering from removal disorientation, confusion, conversion hysteria and other psychoneurotic conditions occurring in old age." Smigel, J. O., et al.: J. Am. Geriatrics Soc. 7:61 (Jan.) 1959.	Settel, E.: Am. Pract. & Digest Treat. 8:1584 (Oct.) 1957. Negri, F.: Minerva med. 48:607 (Feb. 21) 1957. Shalowitz, M.: Geriatrics 11:312 (July) 1956.
IN ALLERGIC PATIENTS useful adjunctive therapy for asthma and dermatosis; particularly effective in urticaria	"All [asthmatic] patients reported greater calmness and were able to rest and sleep better... and led a more normal life.... In chronic and acute urticaria, however, hydroxyzine was effective as the sole medicament." Santos, I. M., and Unger, L.: Presented at 14th Annual Congress, American College of Allergists, Atlantic City, New Jersey, April 23-25, 1958.	Eisenberg, B. C.: J.A.M.A. 169:14 (Jan. 3) 1959. Coirault, R., et al.: Presse méd. 64:2239 (Dec. 26) 1956. Robinson, H. M., Jr., et al.: South. M. J. 50:1282 (Oct.) 1957.
IN HYPEREMOTIVE ADULTS does not impair mental acuity	"... especially well-suited for ambulatory neurotics who must work, drive a car, or operate machinery." Ayd, F. J., Jr.: New York J. Med. 57:1742 (May 15) 1957.	Garber, R. C., Jr.: J. Florida M. A. 45:549 (Nov.) 1958. Menger, H. C.: New York J. Med. 58:1684 (May 15) 1958. Farah, L.: Internat. Rec. Med. 169:379 (June) 1956.

SUPPLIED: Tablets, 10 mg., 25 mg., 100 mg.; bottles of 100. Syrup (10 mg. per tsp.), pint bottles. Parenteral Solution: 25 mg./cc. in 10 cc. multiple-dose vials; 50 mg./cc. in 2 cc. ampules.

Rx PFIZER

New York 17, N. Y.
Division, Chas. Pfizer & Co., Inc.
Science for the World's Well-Being

THE LATTIMORE-FINK LABORATORIES

Topeka — El Dorado
Kansas

A. A. Fink, M.D., Pathologist-Director
C. G. Hermann, M.D., Pathologist
J. L. Lattimore, M.D., Pathologist
H. C. Ebendorf, M.T., Serologist
A. C. Keith, B.S., Chemist
L. A. Hull, A.B., Bacteriologist
W. B. Norris, A.B., Chemist

Anatomical and Clinical Pathology

A.M.A. Approved School of Medical Technology

Containers Furnished Upon Request

BAMADEX®
meprobamate 400 mg., with d-amphetamine sulfate 5 mg., Tablets
anorectic-ataractic

A logical combination for appetite suppression

meprobamate **plus** d-amphetamine...suppresses appetite...elevates mood... reduces tension...**without** insomnia, overstimulation or barbiturate hangover.

Dosage: One tablet one-half to one hour before each meal.

Lederle

Reliable

PROFESSIONAL LIABILITY
INDIVIDUAL INSURANCE
with proficient defense
that cuts the cost

THE MEDICAL PROTECTIVE COMPANY
FORT WAYNE, INDIANA

Professional Protection Exclusively since 1899

KANSAS CITY OFFICE: Robert E. McCurdy, Rep.
8917 W. 94th Street, Overland Park, Kansas Tel. LOgan 1-1498

in all common *diarrheas*

POMALIN LIQUID

Trademark

ANTIDIARRHEAL

with pleasant raspberry flavor

—eases and speeds the return to normal bowel function—

The comprehensive antidiarrheal formula of Pomalin brings positive relief to patients with specific and nonspecific diarrheas, bacillary dysentery, nonspecific ulcerative colitis and enteric disturbances induced by antibiotics.

Pectin and kaolin protect against mechanical irritation, adsorb toxins and bacteria, and consolidate fluid stools. Sulfaguanidine concentrates antibacterial action in the enteric tract. Opium tincture suppresses excessive peristalsis and reduces the defecation reflex.

Each palatable 15 cc. (tablespoon) contains:

Sulfaguanidine U.S.P.	2 Gm.
Pectin N.F.	0.225 Gm.
Kaolin	3 Gm.
Opium tincture U.S.P.	0.08 cc.
(equivalent to 2 cc. of paregoric)	

Dosage

ADULTS: Initially 1 or 2 tablespoons from four to six times daily, or 1 or 2 teaspoons after each loose bowel movement; reduce dosage as diarrhea subsides.

CHILDREN: ½ teaspoon (2.5 cc.) per 15 pounds of body weight every four hours day and night until stools are reduced to five daily, then every eight hours for three days.

HOW SUPPLIED: Bottles of 16 fl. oz.

Exempt narcotic.
Available on prescription only.

Winthrop
LABORATORIES
New York 18, N.Y.

Proven

in over five years of clinical use and more than 750 published clinical studies

Effective

for relief of anxiety and tension

Outstandingly Safe

- simple dosage schedule produces rapid, reliable tranquilization without unpredictable excitation
- no cumulative effects, thus no need for difficult dosage readjustments
- does not produce ataxia, change in appetite or libido
- does not produce depression, Parkinson-like symptoms, jaundice or agranulocytosis
- does not impair mental efficiency or normal behavior

for the tense and nervous patient

Despite the introduction in recent years of "new and different" tranquilizers, Miltown continues, quietly and steadfastly, to gain in acceptance. Generically and under the various brand names by which it is distributed, meprobamate (Miltown) is prescribed by the medical profession more than any other tranquilizer in the world.

The reasons are not hard to find. Miltown is a *known* drug, evaluated in more than 750 published clinical reports. Its few side effects have been fully reported; there are no surprises in store for either the patient or the physician. It can be relied upon to calm anxiety and tension quickly and predictably.

Usual dosage: One or two 400 mg. tablets t.i.d.
Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets; or as MEPROTABS®— 400 mg. *unmarked*, coated tablets.

® TRADE-MARK

Miltown®

meprobamate (Wallace)

WALLACE LABORATORIES / *New Brunswick, N. J.*

CM-2053

"Gratifying" relief from

for your patients with
'low back syndrome' and
other musculoskeletal disorders

POTENT muscle relaxation
EFFECTIVE pain relief
SAFE for prolonged use

stiffness and pain

"gratifying" *relief from stiffness and pain in 106-patient controlled study (as reported in J.A.M.A., April 30, 1960)*

"Particularly gratifying was the drug's [SOMA's] ability to relax muscular spasm, relieve pain, and restore normal movement . . . Its prompt action, ability to provide objective and subjective assistance, and freedom from undesirable effects recommend it for use as a muscle relaxant and analgesic drug of great benefit in the conservative management of the 'low back syndrome'."

Kestler, O.: Conservative Management of "Low Back Syndrome", J.A.M.A. 172: 2039 (April 30) 1960.

FASTER IMPROVEMENT—79% complete or marked improvement in 7 days (Kestler)

EASY TO USE—Usual adult dose is one 350 mg. tablet three times daily and at bedtime.

SUPPLIED: 350 mg., white tablets, bottles of 50.
For pediatric use, 250 mg., orange capsules, bottles of 50.

Literature and samples on request.

SOMA®

(CARISOPRODOL, WALLACE)

WALLACE LABORATORIES, CRANBURY, NEW JERSEY

Prosthetic & Orthopedic Appliances

.... since 1906

The W. E. ISLE COMPANY

1121 Grand Ave., Kansas City, Mo.

Certified:

• Facility
• Prosthetists
• Orthotists

BA 1-0206

Prairie View Hospital

Newton, Kansas

Emphasizing a therapeutic milieu and psychotherapy. A non-profit psychiatric service of the Mennonite Central Committee.

anorectic-ataractic ®

BAMADEX

meprobamate 400 mg., with d-amphetamine sulfate 5 mg., Tablets

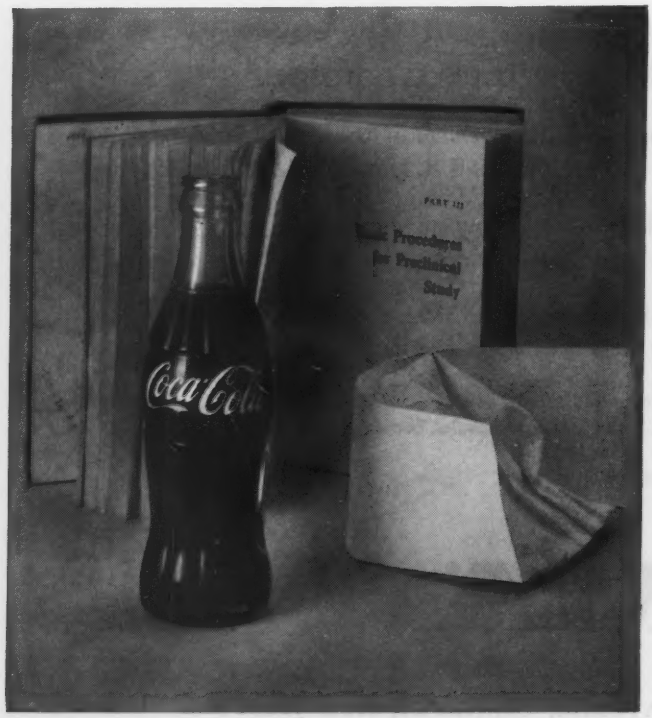
FOR THERAPY
OF OVERWEIGHT PATIENTS

- d-amphetamine depresses appetite and elevates mood
- meprobamate eases tensions of dieting (yet without overstimulation, insomnia or barbiturate hangover).

Dosage: One tablet one-half to one hour before each meal.

A LOGICAL COMBINATION
IN
APPETITE CONTROL

Lederle



When too many tasks
seem to crowd
the unyielding hours,
a welcome
"pause that refreshes"
with ice-cold Coca-Cola
often puts things
into manageable order.

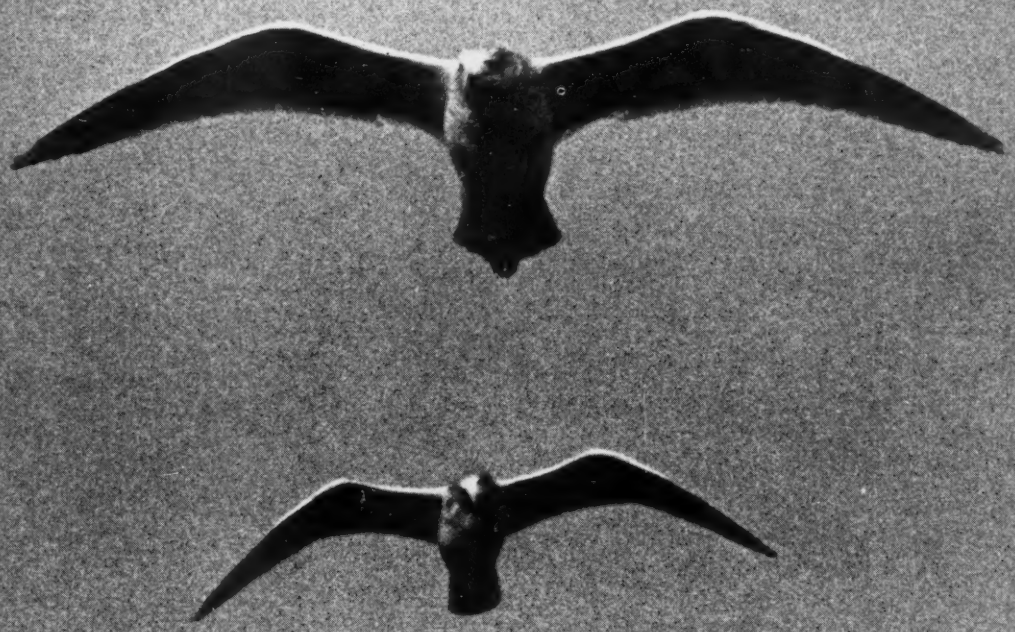
DRINK
Coca-Cola
REG. U.S. PAT. OFF.

THE ORIGINAL potassium phenethicillin

SYNCILLIN®

(POTASSIUM PENICILLIN-152)

higher peak blood levels orally
than with oral penicillin V or intramuscular penicillin G



A dosage form to meet the individual requirements of patients of all ages in home, office, clinic, and hospital:

Syncillin Tablets—250 mg. . . . Syncillin Tablets—125 mg.

Syncillin for Oral Solution—60 ml. bottles—when reconstituted, 125 mg. per 5 ml.

Syncillin Pediatric Drops —1.5 Gm. bottles. Calibrated dropper delivers 125 mg.

Complete information on indications, dosage and precautions is included in the official circular accompanying each package.

BRISTOL LABORATORIES, SYRACUSE, NEW YORK BRISTOL™

Deformity Appliances of Quality

Orthopedic and Surgical Appliances

Artificial Limbs
Trusses

Abdominal Supports

Elastic Hosiery

Foot Supports

Surgical Corsets

Taylor Back Brace
Made to Order in
Our Own Factory

P. W. HANICKE MFG. CO.
1009 McGee St. VI 2-4750
KANSAS CITY, MO.

CLASSIFIED ADVERTISEMENTS

TWO-MAN Pediatric Partnership seeks third pediatrician. Located in beautiful new medical building in one of Iowa's most progressive towns. Excellent school, church and cultural facilities. Very fine opportunity. Write the JOURNAL 1-360.

WANTED. General Practitioner—Cherryvale, Kansas. One who will do night work when needed. Good opening. Nothing to sell. Write the JOURNAL 2-360.

AVAILABLE: Resident doctor needed to treat patients in emergency room and out patient department. Good Salary. Call Kansas City, Kansas, MAyfair 1-0700 or Write the JOURNAL 1-660.

OPENING for associate physician in established office at excellent location in northwest Denver. Doctor—moving—enjoyed a very large practice, a very substantial part of which will remain to the new doctor. Remaining associate physician is well established internist. Write the JOURNAL 2-660.

INTERNIST, Board Eligible or Certified, Write the JOURNAL 7-160.

FOR SALE: Physician's equipment, instruments, complete X-ray, five rooms office furniture. All modern, first class equipment of a late physician and surgeon. Office in excellent location, ground floor, progressive community, new 80-bed hospital under construction. Excellent opportunity for young physician and surgeon. Write the JOURNAL 7-260.

OPPORTUNITY for research investigator for long term or short term medical research. Write the JOURNAL 1-860.

it's convenient to buy

OXYGEN THERAPY EQUIPMENT

FOR THE OUT PATIENT

ALL THE NECESSARY EQUIPMENT — REGULATORS, HUMIDIFIERS, FLOWMETERS, CATHETERS, MASKS, CANNULAS — INCLUDING HIGH PURITY OXYGEN FOR THE TREATMENT OF THE OUT PATIENT.

RENTAL OR PURCHASE

REGULAR TRUCK DELIVERY SERVICE THROUGHOUT KANSAS

KANSAS OXYGEN, INCORPORATED
P. O. BOX 551 • HUTCHINSON, KANSAS • PHONE MOHAWK 5-5551

OPEN HOUSE

Please accept this invitation to visit the Kansas Oxygen Plant at the extreme east end of Carey Boulevard, 8 to 5 Monday through Friday; other times by appointment.

The Neurological Hospital

2625 West Paseo,

KANSAS CITY, MISSOURI

★ ★ ★

A voluntary hospital providing the care and treatment of nervous and mental patients and associate conditions.

Sick Room Equipment
Health Machines

★ **RENTALS — SALES** ★

Invalid Walkers	Exercycle
Wheel Chairs	Massage Belts
Hospital Beds	Exercise Bike

PETRO'S SURGICAL APPLIANCES
618-20 Quincy Topeka, Kans. Ph. CE-40207

A
logical
prescription for
overweight patients

anorectic-ataractic

BAMADEX®

meprobamate 400 mg., with d-amphetamine sulfate 5 mg., Tablets

meprobamate **plus** d-amphetamine... depresses appetite...elevates mood... eases tensions of dieting...**without** over-stimulation, insomnia or barbiturate hangover.

Dosage: One tablet one-half to one hour before each meal.

Lederle

...MALNUTRITION OR
LEG CRAMPS DURING PREGNANCY?

OUTMODED AS GODEY'S FASHIONS!

℞ NEW

PRENALIN-O®
PRENATAL SUPPLEMENT

1. Oyster Shell Calcium - Phosphorus Free!
2. New Form of Iron!
3. Dry Filled Capsule - Sure, Quick Absorption!
4. Economical Once-A-Day Dosage!
5. Wider Range Nutritional Support!
6. Relieves Troublesome Leg Cramps!

EACH dry filled capsule (lavender and white) provides:

Ferrous Fumarate (Iron)	150 mg.	Vitamin B-12 (Cobalamin conc. NF)	2 mcg.
Deep sea oyster shell (Calcium)	600 mg.	Folic Acid	0.25 mg.
Vitamin C	50 mg.	Niacinamide	10 mg.
Vitamin A	4000 USP Units	Vitamin K (Menadione)	0.25 mg.
Vitamin D	400 USP Units	Rutin	10 mg.
Vitamin B-1	2 mg.	Sodium Molybdate	3 mg.
Vitamin B-2	2 mg.	Fluorine (Calcium Fluoride)	0.25 mg.
Vitamin B-6	0.8 mg.	Iodine (Potassium Iodide)	0.15 mg.

SAMPLES ON REQUEST

TUTAG

S. J. TUTAG & CO.
DETROIT 34, MICHIGAN

Protection Against Loss of Income From Accident and Sickness as Well as Hospital Expense Benefits for You and All Your Eligible Dependents.

ALL PREMIUMS COME FROM — PHYSICIANS SURGEONS DENTISTS — ALL BENEFITS GO TO

PHYSICIANS CASUALTY & HEALTH ASSOCIATIONS
OMAHA 31, NEBRASKA
Since 1902

Handsome Professional Appointment Book sent to you FREE upon request.

CHANGED YOUR ADDRESS RECENTLY?

If you have changed your address recently, or intend to do so shortly, please return this coupon properly filled out to insure uninterrupted delivery of your copies of THE JOURNAL. Send your change of address to: THE JOURNAL OF THE KANSAS MEDICAL SOCIETY, 315 W. 4th St., Topeka, Kansas.

Name .....

Former address:

Street .....

City .....

State .....

New address:

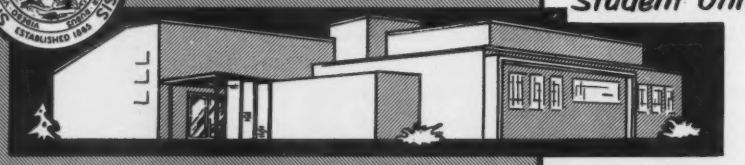
Street .....

City .....

State .....

(Duplicate copies cannot be mailed to replace those undelivered through failure to notify this office of your change in address. Please notify us before 15th of the month.)

facilities of the Continuation Center and Student Union Building



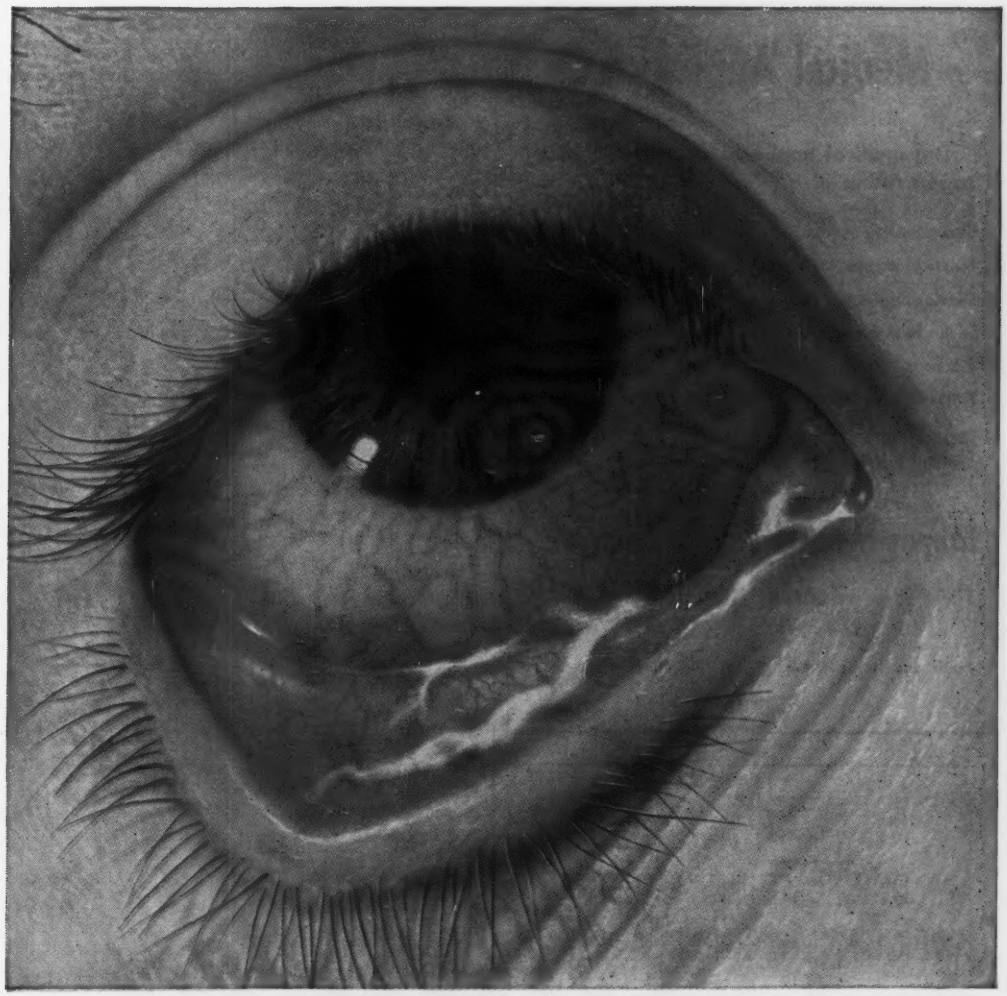
For Reservations Write or Call....

Executive Director,
Continuation Center & Student Union Bldg.
University of Kansas Medical Center
39th & Rainbow
Kansas City, Kansas TA 2-5252 Extension 450

We invite you to make use of the facilities of the Continuation Center and Student Union Building (The Student Center) at any time you are in the Kansas City area—for professional training, for business, for pleasure. All-weather tunnels connect all buildings at the University of Kansas Medical Center.

- Studio-type guest rooms with twin beds, shower and tub are spacious and beautifully decorated.
- Air conditioning
- 24-hour desk service
- Free parking
- Telephone service

Rates: Single $5.50, Double $8.50



no irritating crystals[1] · uniform concentration in each drop[2]

STERILE OPHTHALMIC SOLUTION

NEO-HYDELTRASOL®

PREDNISOLONE 21-PHOSPHATE-NEOMYCIN SULFATE

2,000 TIMES MORE SOLUBLE THAN PREDNISOLONE OR HYDROCORTISONE

"The solution of prednisolone has the advantage over the suspension in that no crystalline residue is left in the patient's cul-de-sac or in his lashes . . . . The other advantage is that the patient does not have to shake the drops and is therefore sure of receiving a consistent dosage in each drop."[2]

1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957.
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

supplied: 0.5% Sterile Ophthalmic Solution NEO-HYDELTRASOL (with neomycin sulfate) and 0.5% Sterile Ophthalmic Solution HYDELTRASOL®. In 5 cc. and 2.5 cc. dropper vials. Also available as 0.25% Ophthalmic Ointment NEO-HYDELTRASOL (with neomycin sulfate) and 0.25% Ophthalmic Ointment HYDELTRASOL. In 3.5 Gm. tubes.

HYDELTRASOL and NEO-HYDELTRASOL are trademarks of Merck & Co., Inc.

MSD MERCK SHARP & DOHME Division of Merck & Co., Inc., Philadelphia 1, Pa.

Medical Appliances

Our medical appliance department does expert fitting of:

Elastic hosiery
Breast prostheses
Cervical braces
Taylor back braces
Rib belts
Pelvic traction belts
Dorso-lumbar supports
Lumbo-sacral belts
Maternity brassieres
Maternity belts
Trusses

Fittings by prescription only

Munns Medical Supply Company

Topeka, Kansas

Tenth and Horne Streets Telephone CE 5-5383

A LOGICAL ADJUNCT TO THE WEIGHT-REDUCING REGIMEN

meprobamate **plus** d-amphetamine... reduces appetite...elevates mood...eases tensions of dieting...**without** overstimulation, insomnia or barbiturate hangover.

Dosage: One tablet one-half to one hour before each meal.

anorectic-ataractic

BAMADEX®

meprobamate 400 mg., with d-amphetamine sulfate 5 mg., Tablets

Lederle

Index to Advertisers

Ames Company ..... Inside back cover

Bristol Laboratories 14, 31
Burroughs Wellcome and Company, Inc. 12

Classified Ads 32
Coca-Cola Company 30

Geigy Pharmaceuticals 8

Health-Mor, Inc. 20, 21
Hanicke, P. W., Manufacturing Company 32

Isle, W. E., Company 30

Kansas Oxygen, Inc. 32

Lattimore-Fink Laboratories 26
Lederle Laboratories ..... Center section, 26, 30, 33, 36
Lilly, Eli and Company 18
Lorillard, P., Company 10

Massengill, S. E., Company 9
Medical Protective Company 26
Merck, Sharp and Dohme, Inc. 5, 35
Munns Medical Supply Company, Inc. 36

Neurological Hospital 33

Parke, Davis and Company .... Inside front cover and 3
Petro's Surgical Appliances 33
Physicians Casualty Association 34
Pitman-Moore 24
Prairie View Hospital 30

Ralph Clinic ..... Center section
Robins, A. H., Company, Inc. 16, 23
Roerig, J. B., and Company, Inc. 25

Saunders, W. B., Company 13
Searle 19
Smith, Kline and French Laboratories ..... Back cover
Squibb, E. R., and Sons 17, 22

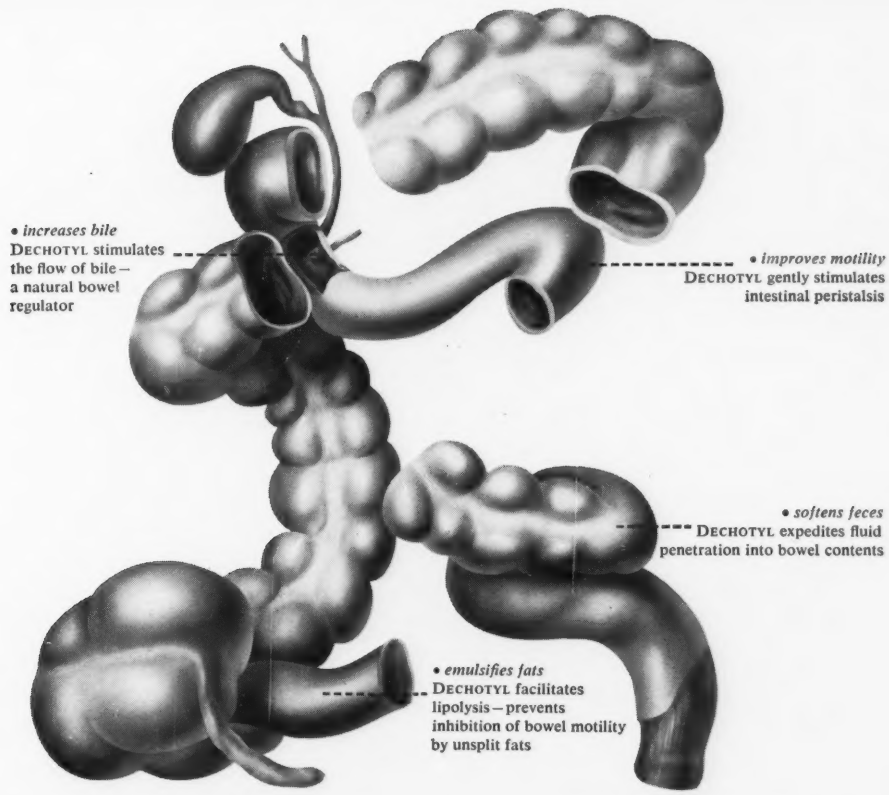
Tutag, S. J., and Company 33

University of Kansas Medical School .. Center section, 34

Wallace Laboratories ..... 28, facing 28, 29
Wesson Oil, Snowdrift 6, 7
Winthrop Laboratories ..... Facing 10, 11, 15, 27

ADVERTISING

All advertising contracts, and all copy from advertisers under contract are subject to approval of the editorial board. Copy should be received by the 15th of the month immediately preceding the month of publication.


• increases bile
DECHOTYL stimulates the flow of bile—a natural bowel regulator
• improves motility
DECHOTYL gently stimulates intestinal peristalsis
• softens feces
DECHOTYL expedites fluid penetration into bowel contents
• emulsifies fats
DECHOTYL facilitates lipolysis—prevents inhibition of bowel motility by unsplit fats

helps free your patient from both... constipation and laxatives

DECHOTYL®

TRABLETS*

well tolerated...gentle transition to normal bowel function

Recommended to help convert the patient—naturally and gradually—to healthy bowel habits. Regimens of one week or more are suggested to assure maintenance of normal rhythm and to avoid the repetition of either laxative abuse or constipation.

Average adult dose: Two TRABLETS at bedtime as needed or as directed by a physician. *Action usually is gradual, and some patients may need 1 or 2* TRABLETS *3 or 4 times daily.*

Contraindications: Biliary tract obstruction; acute hepatitis.

DECHOTYL TRABLETS provide 200 mg. DECHOLIN,® (dehydrocholic acid, AMES), 50 mg. desoxycholic acid, and 50 mg. dioctyl sodium sulfosuccinate, in each trapezoid-shaped, yellow TRABLET. Bottles of 100.

*AMES T.M. for trapezoid-shaped tablet.

AMES
COMPANY, INC
Elkhart • Indiana
Toronto • Canada

84160

in overweight

℞ **DEXAMYL®**

brand of dextro amphetamine and amobarbital

SPANSULE®

brand of sustained release capsules

for the patient who is tense, irritable, frustrated by inability to stick to diet

SMITH KLINE & FRENCH

...and for the patient who is listless, lethargic, depressed by reducing regimens:

℞ DEXEDRINE® SPANSULE®

brand of dextro amphetamine sulfate — brand of sustained release capsules

Each 'Dexamyl' Spansule sustained release capsule (No. 2) contains 'Dexedrine' (brand of dextro amphetamine sulfate), 15 mg., and amobarbital, 1½ gr. Each 'Dexamyl' Spansule capsule (No. 1) contains 'Dexedrine', 10 mg., and amobarbital, 1 gr.
Each 'Dexedrine' Spansule sustained release capsule contains dextro amphetamine sulfate, 5 mg., 10 mg., or 15 mg.

Stormont Medical Library,
State House,
Topeka, Kansas